

SOCIAL PERCEPTION :
AN EXPERIMENTAL STUDY .

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ABSTRACT

An extensive review of the literature gathered during the past fifteen years under the title of "Social Perception" or "Empathy" revealed little consensus of opinion as to the exact definition of the concept and the nature of mental abilities or processes underlying it.

On the basis of this review, a tentative attempt has been made to re-define Social Perception as the process of predicting the attitudes of other persons. The importance of such a process or ability for interpersonal communication has been discussed and its links with the ordinary processes of thinking and perceiving have been demonstrated. It has been argued that Social Perception in this operational sense is an inferential process depending on two main classes of evidence : Evidence provided by the person whose responses are to be predicted and evidence derived from the context of prediction, i.e., from the predictee's larger class-memberships, the kind of response that is to be predicted , and the connotative properties of the medium of expression employed.

A consideration of the second type of evidence has given rise to the hypothesis that accuracy of prediction should be largely dependent on the prevalence and cultural value of the response category to be predicted. The multiplicity of possible sources of inference in each case has given rise to some serious doubts as to the possibility of finding a general predictive ability except when

the common features of the media of prediction or the responses to be predicted predetermine such a generality.

Two experiments have been carried out. The first was concerned with the ability of a group of 240 school children between the ages of 13 and 14 years to predict the positive and negative affective and evaluative responses of their classmates towards themselves. It was found that while children acted significantly better than comparable robots in predicting the positive and socially desirable responses of their classmates, their achievement in predicting the negative and socially undesirable attitudes of others was not significantly different from that of a chance model. Similarly, while accuracy scores in predicting either positive or negative responses on different criteria correlated significantly, there was only a slight negative correlation between the two kinds of accuracy. Nor was there any significant correlation between accuracy of predicting others' affective and evaluative responses.

In the second experiment, a sample of 106 training college students were asked to predict the responses of the majority of men and women of their cultural sub-groups and those of two specific individuals on a battery of tests covering the areas of social attitudes, values, and personal dispositions. The amount of accuracy was found to vary positively with the degree of prevalence and objectivity and, negatively, with the variance of the response variable concerned. Predictions of own-sex others' responses were highest in terms of accuracy and those of a relatively unknown other's responses lowest.

Predictions of a well-known individual's responses and those of the opposite-sex others-in-general occupied the second and third places in terms of accuracy.

There was little sign of generality in predicting the responses of the same category of others on various dimensions or in predicting the responses of several others on the same dimension or medium of response. Of correlations between the sums of accuracy scores over the four types of predictees only that for the two individual others was significant at .05 level. A consideration of the inconsistent correlations obtaining between different types of accuracy and certain personality measures cast further doubt on the generality of the underlying capacity. Intelligence, for instance, was found to correlate positively and significantly with accuracy in predicting the well-known other's responses but negatively -albeit nonsignificantly- with accuracy in predicting the responses of others-in-general.

The results, thus, appear to bear out the tentative hypotheses derived from our conceptual analysis.

PREFACE

The study reported here is the result of three years of full-time work. Although it has been carried out single-handedly and the author alone is responsible for all shortcomings or mistakes, yet many people have helped him in one way or another throughout this period. Thus any credit that can be claimed for this work is justly shared by many others besides the author. These others, however, are too numerous to be named and thanked here. They range all the way from authors whose writings have provided me with the necessary background and guiding lines, teachers and pupils of the schools where my study took place, lecturers and students of the Training Colleges who so patiently took part in my second study, to the staff of the Institute of Education library who were most helpful in finding out my references. To all these people I am deeply grateful.

Among the people who have directly influenced my work, my acting supervising tutor, Mrs. D. M. Penfold, and her predecessor Mr. H. E. O. James have shown the utmost of interest in and sympathy with my problems and have been most ungrudgingly helpful in giving me advice and encouragement. Mr. James' lectures on Social Psychology were mainly responsible for my choice of topic, while Mrs. Penfold's course on Statistics furnished me with the technical armament needed for carrying out an experimental study. My gratitude to them is far beyond the capacity of my faltering English. I am also deeply grateful to professors P.E. Vernon and B. M. Foss for the encouraging attention they have given my work.

To Messrs. Furneaux and Gibson who provided me with a copy of their Junior Maudsley Personality Inventory, and to Dr. Richardson who permitted me to use her British version of the Allport-Vernon Test of Values I am greatly indebted .

Among my Iranian friends who have contributed to this work two deserve especial mention: my wife who provided me with a home in a foreign land the full significance of which I did not realize until I was deprived of it, and my young friend Miss. Forugh Kiasatnejad whose unfailing assistance made my clerical work much easier.

Last but in no way least I owe a special debt of gratitude to the Iranian people whose financial support made my study possible and whose love rendered much of the hardships of my student life easier to bear. As a humble token of gratitude, I dedicate this work to my people in the hope that the knowledge gained in the process of this study will some day be serviceable to them .

CHAPTER I :

SOCIAL PERCEPTION : ITS SCOPE AND DEFINITION

The last two decades or so have witnessed an ever increasing interest in and study of the phenomena of perception on the part of social psychologists. This new trend of emphasis which came to be known as "the new look in psychology" in early 1950's, may be traced back to the original field studies of Bartlett (1932) and the pioneer experiments of Muzefer Sherif (1935) in 1930's. By early 1950 the "new look" psychologists had established themselves in any and every field of psychology - both pure and practical - so much so that in 1949 Werner could speak of perception as becoming "a general meeting ground of general experimental and clinical and social psychology". (Werner, 1949). The same opinion was expressed by Krech (1951) who called the social psychology of his time "a-theoretical" and after reviewing the sporadic and incoherent theories put forward by different schools came to the conclusion that all these theories and indeed all social psychological investigation could best be reorganised around a nucleus of cognition or perception. That this faith is

still alive is evidenced by Krech and his colleagues' new book (Krech et al, 1962) in which the social psychologists' increased interest in and knowledge of the perceptual phenomena are regarded as one of the "most heartening developments in American psychology".

From this concentration of effort and interest has emerged a new field in social psychology - viz. the field of "social perception". Although the term had been used by some psychologists in connection with the recognition of emotional states from facial expressions since early 1920's (e.g., Gatas, 1923) it did not appear in the index of the "Psychological Abstracts" until late 1945. Since then, it has become one of the most frequently used terms of social psychology and has occupied a high position in the study of social behaviour. Despite this increased use of and interest in the term social perception, the area covered by it is still far from clear and hardly defined or delineated. Indeed, one of the latest reviewers of this field. has reached the conclusion that: "Investigations referred to in one context or another as concerned with it add up to a patchwork, not to a pattern. Therefore, to attempt a

definition (or a series of definitions) of social perception would be a sterile task". (Tajfel, 1962, p.20).

Loosely, social perception may be defined as a field of investigation which is mainly concerned with the interaction between the process of perception on the one hand and the multitude of factors arising from the social nature of the perceiver and/or the perceived. In this context the word perception is often used in a much wider sense than that accepted by the experimental psychologist concerned with perception (e.g. Bartley, 1957), covering all the ways and processes through which man gets information about his environment. More often than not, this involves one or all of other processes underlying cognition, such as remembering, judging, thinking as well as perceiving.

Our definition is similar to one proposed by Macleod, (1951). He distinguished between the two senses in which the term was used. These two meanings are the social determination of perception on the one hand and the perception of the "social" on the other. This distinction has been recognised by later workers

as well (e.g. Cartwright, 1959; Tajfel, 1962).

The question of the social determination of perception received much attention in ^{the} 1940's. It was argued that the social behaviour of man is determined by and conditional upon the social environment in which he lives. This social environment is not the same as defined by an independent observer - even if this observer happens to be an omniscient sociologist - but it is what is actually apprehended by the behaving individual himself. This argument enhanced the place of perception in the study of social behaviour culminating in a state of "perceptual imperialism" - as Krech called it (Krech, 1949). At the same time, it was recognised that perception is rarely, if ever, a perfect "mirroring" of the external world. But, what we perceive, is, to a considerable degree, determined by our wants, hopes, expectations and experiences - in short our whole personality. In other words, what we see is what we are made to see, and what makes us to see as we do is the social milieu in which we are brought up, hence the characterisation "social".

This emphasis on the social determinants of perception was a survival of the well-known controversy between nativists and empirists in the domain of philosophy which dominated the history of philosophy in the 19th century. The only novelty was the introduction of the term "social" to cover all experiential factors and conditions. This emphasis on the social origin of experience was a result of the social psychologists' acceptance of the importance of the socialization process in shaping the individual's personality. A good example of this is provided by Hartley & Hartley (1952) who have stressed that: "It is illogical to separate socialization and personality development. The two terms refer to two aspects of the same thing. Socialization emphasises the process of learning to conform to social demands; personality refers to the end product of that process".(p. 203).

This aspect of perception has been subjected to a vast amount of experimental investigation and theoretical speculation. The number of these studies is too large to permit a review here, and there exist some exhaustive reviews (Pastor, 1949; Allport, 1955;

Jenkin*, 1957; Bartley, 1958; Dreger 1961) which make a new attempt unnecessary. Allport (1955) lists six more or less independent propositions which have been experimentally tested: (1) that bodily need determines, within limits, what a subject will perceive; (2) that reward and punishment can influence perception through raising or lowering the threshold levels; (3) that values represented in the personality of the perceiver tend to determine the threshold of recognition; (4) that size perceptions evoked by certain objects, such as coins, are influenced by the social background of the perceiver; (5) that the personality dynamics of the perceiver predispose him to perceive in a manner consistent with such features; and (6) that the perception of personally disturbing stimuli is hindered or distorted by a "perceptual defense mechanism". Bruner and his disciples have made several attempts to build a theoretical system on these findings. The earlier of these systems is the so-called directive-state theory of perception (Bruner & Postman, 1948) which differentiates between the structural or autochthonous and

behavioural determinants of perception, attributing the first class of determinants to the innate, unchangeable endowment of the individual and the second class to high level processes that carry the effects of the past experience in general and include the organism's needs, tensions, value systems and biases. The second theory is known as the Hypothesis of Expectancy Theory (Bruner, 1951) and states that the perceptual responses of an organism do not arise from blank neutral ground, but are based on or directed towards sets, hypotheses or expectancies held by the subject. The greater a set or hypothesis, the greater the probability of its activation in a given situation and the less stimulus information that will be needed to activate it. Hypotheses may be confirmed or infirmed by perception.

Unfortunately, most of the experiments done in this field suffer from some form of methodological weakness, theoretical confusion and/or statistical misinterpretation. In most cases the term "perception" has been used in an unjustifiably loose sense. More often than not, experimental conditions have been such

as to allow the subjects to report on judgement, thinking or remembering rather than perceiving. This seems to have been inevitable in view of the phenomenological properties of social events. As Macleod has pointed out: "The social world may include the here and now (the two essential components of perception) but it extends far beyond both in time and space. In functional terms, the social world is a product of memory and imagination rather than of perception" (Macleod, 1947, p.47-48). Moreover, not all findings have been confirmed by later repetition of the experiment, and conflicting interpretations of the same data are not hard to find. These criticisms seem to have dispelled much of the enthusiasm and optimism of the early "new look" psychologists. The present attitude of most psychologists is well summarised by the following commentary by Macleod - himself one of the earliest advocates of perceptual-phenomenological approach in social psychology: ". . . It has been demonstrated to almost everyone's satisfaction that the wishes, anxieties, and expectations of the perceiver can influence his judgements, but there has been no suggestion that motivation alone will trans-

form squares into circles or reds into blues. In general, the modern Darwinians have done little more than shift the emphasis from stimulus - determination to need determination, according slightly more to the latter but without seriously challenging the fundamental proposition that there is an independently existing reality of which our percepts are imperfect copies." (Macleod, 1960, 230-31).

That this conclusion is not shared by all psychologists is evidenced by G.W. Allport's new book in which he has borrowed the term "proception" from the philosopher Josef Buchler (1955) to indicate the part played by the perceiver's personality and past experiences in shaping his perceptions of the world. "The term recognises the fact that each individual carries with him his past relations to the world, his emotional dispositions, and his own experiences for the future. These "proceptive directions" provide his potentialities for seeing, hearing, doing, thinking, making and saying . . . I shall employ the term proception to cover any and all influences of set that intervene between sensory input and act. Whereas the term "perceive" should

rightly refer to sensory appearance, the term "perceive" covers whatever influence set may have not only on sensory appearance, but also on imagery, remembering and forgetting, judgement, reasoning and reporting." (Allport, 1961, 264-265). Allport's view is representative of many personality psychologists, some of whom have gone so far as to define personality in terms of the unique way in which an individual perceives his world (Stagner, 1960) and others have found in perception a new basis for their typological classifications (e.g. Eysenck et al, 1957).

However, the second type of social perception - that is, the "perception of the social" - has gained in importance and has become the centre of much experimental effort. Of late, this type of perception has been christened "person perception" (Tagiuri & Petrullo (eds.) 1958) or "person cognition" (Taft, 1960) or "person interpretation" (Vernon, 1963). The former rubric seems to be more frequently used than the latter and it will be used in this study, regardless of the limitations inherent in the term "perception" in this context.

Despite the fact that most of an individual's life

time is spent with or among other individuals and much of his well-being and happiness depends on his interactions with other individuals, this "human" aspect of the environment has been mostly overlooked by the traditional psychology of perception. As Macleod has put it: "In the traditional textbooks the chapters on perception have dealt with space, time, movement, form, etc., never with persons". (Macleod, 1960). Even in those rare instances when a modern writer on the psychology of perception (e.g. Bartley, 1958) has deviated from the tradition and devoted a chapter of his work to the field of social perception, this is wholly concerned with the first type of social perception, that is the social determination of perception. This may reflect either the experimental psychologists' conviction that problems of perceiving other people are not different from those of perceiving inanimate objects and require no separate treatment; or it may be another example of the criticism often made by clinical psychologists that experimental psychologists tend to shun those characteristically human phenomena which are not amenable to study

by their well tried experimental techniques but require new approaches. Whatever the real point at issue, we have run the unfortunate risk of dividing the study of perception into two air-tight compartments of "perception" and "social perception" - a danger against which we were warned long ago by Bruner and Postman (1948). Thus the area of person perception has been largely left to social, clinical and personality psychologists.

It begs no question that persons are to a large extent perceived in the same manner as other objects. Laws governing and processes involved in seeing a person, hearing his voice and touching his skin are, no doubt, the same as seeing a tree, hearing a bell or touching a piece of wood. But, over and above these common objective characteristics, a human being has something peculiar about himself which is not shared by other objects of our environment. He is a man or woman like us. He is a self - a "self" with all the peculiarities and complexities of our own selves. He not only is an object of our perception and awareness, but, at the same time, he too can and does perceive us. He is not a passive object of my perception and intention as an inani-

mate object usually is. He also is active, attentive, purposeful and can do something to me. He can harm or benefit me and I too, if I am not careful, may hurt him even by merely looking at him. He can love or hate me; he can offend me or satisfy me. He can make me feel ashamed or proud. He, a person, can and does all these things and many more. In Heider's (1958) terms: "In contrast to things, persons are rarely mere manipulanda, rather they are action centres, they can do something to us, . . . persons are perceived as having abilities, as acting purposefully, as having wishes or sentiments, as perceiving or watching us. They are systems having representations, they can be our friends or our enemies, and each has his characteristic traits. Enumerating the contents of the perception of other persons is equal to listing the concepts of naive, common sense psychology." (p.22). And "they are systems having an awareness of their surroundings and their conduct refers to this environment, an environment that sometimes includes ourselves." (Heider, 1958b, p.21.)

This emphasis on purpose, ability and awareness as determining factors in differentiating person perception from other types of perception, is shared by nearly all other

workers in this field (Allport, 1961). What is not made clear is the fact that nearly all other forms of animate objects of perception - and, sometimes, some inanimate objects as well - share some or all of these qualifications to one degree or another. This fact has escaped most of the writers on this topic. Heider (1958b), for example, states that: "We shall speak of 'thing perception' or 'non-social perception' when we mean the perception of inanimate objects and of 'person perception' or 'social perception' when we mean the perception of another person" (Heider, 1958b, 21). Thus he leaves no place for the perception of other animate objects or animals - even those time-honoured members of human society, dogs and cats - who also are not mere manipulanda, but are action centres and capable of doing a good deal of harm or benefit. As Hebb & Thompson (1954) have suggested the study of social behaviour in animals can greatly increase our insight into social behaviour and its perceptual concomitants in man.

Purposes, emotions, beliefs, wishes and traits of a person differ in one important respect from other objects of his environment: Cues underlying their perception or

inference are not as easily and explicitly available as those underlying the perception of a physical object's colour, size or distance. As Heider puts it: "It is probably fair to say that the stimulus fields basic for person perception are usually more extended in time than those relevant to thing perception . . . Although we believe that we get to know something about a person from the shape of his face or even the colour of his hair, these physiognomic properties are far outweighed by his actions as cues to his personality. In most cases we cognise a person's traits, and especially his wishes, sentiments, or intentions, from what he does and says, and we know considerably less when we are limited to what we can see of him as a static object." (Heider, 1958b, p.39). This quality of being more extended in time has required that more cognitive processes than pure perception - in the sense of that which is given to us here and now - be used in getting to understand the other person. As Macleod has pointed out "The social world is too large to be encompassed in a single act of apprehension" (Macleod, 1947, p.48).

This quality of person perception as requiring more

than perception alone, has cast some doubt as to the justifiability of using "perception" in this context. To overcome this difficulty some writers have re-defined perception so as to make it include all processes of getting information about the environment, from direct perception to explicit inference (Heider, 1958b, P. 27).

Others have proposed using more general terms such as proception or judgement (Allport, 1961) or cognition (Tajfel, 1962; Newcomb, 1958) instead of perception.

The difficulty seems to have arisen from some experimental psychologists' insistence on using perception in a highly restricted sense covering the immediate apprehension of what is going on here and now and through definite stimulus-response relationship obtaining between the organism and the environment. The ultimate aim is to rid perception from the effects of the perceiver's memory, past experience and learning. Such a complete divorce of perception from memory, however, is highly improbable, if at all possible. Hebb's (1949) review of evidence appears to leave little place for doubt that even the most primitive acts of perceptual differentiation, i.e. the differentiation of figure from the ground, depends upon learning and experience.

Moreover, not only are many psychologists satisfied with much less rigorous definitions of perception (e.g., F. H. Allport, 1955, P. 14) but also, as Hamlyn's (1961) historical review shows, modern philosophy has long abandoned the idea of perception as a unitary process. As Wittgenstein and Ryle have argued, we can perceive things and "things as", and the latter always involves

many other processes besides the immediate mirroring of the here and now. As to the distinction between perception and cognition as Allport (1955) has argued the two processes are so closely intertwined that it would scarcely be feasible, especially from the stand point of theory, to consider one of them in isolation from the other.

Notwithstanding these suspicions, many recent studies have tried to apply the techniques of experimental psychology to the study of person perception. For instance, Moore (1958) has tried to handle person perception as a form of problem solving behaviour. Rudin (1959) has applied the psychophysical methods of bisection and equal-appearing intervals to the perception of persons. Rudin & Stagner (1958) have shown that figure and ground phenomena are also true of person perception. Levy (1960) has verified a Weber-Fraction -Analogue in person perception. He has also demonstrated the applications of Conditioning and Generalization to the changes in social perceptual dispositions (Levy, 1961) . Berger (1962) has presented a conceptual framework in terms of conditioning through vicarious instigation to account for empathy. These studies have gone a long distance to bridge the gap between social and non-social (object) perception.

Among theoretical treatments of the field, Asch (1952) and Heider (1958) have tried to apply the Gestalt principles of thing perception to person perception. Asch has argued for the existence of physiognomic characteristics and an isomorphic relationship between a person's action and his experiences which make it possible to perceive his character directly from his physical appearance and behaviour. Oldfield (1943), whose classical analysis of the process of person perception remains one of the most interesting and detailed efforts ever made, finds no difference between the conditions and processes governing judgements of persons and judgements of such objects as eggs. To him, "both acts are manifestations of a skill requiring the construction through experience of an implicit and well-articulated standard..... I will call these combined standards derived from past experience , 'Schemata'." (Oldfield, 1943, p. 44-45).

Before the "new look" psychology set in, person perception had been mainly a field of activity of the experimental psychologists concerned with the study of emotions, and, later, of personality psychologists. The first group was interested in the study of facial expression of emotions and the scope and precision of its recognition by different observers. For this

purpose, several standard tests were devised and norms according to the age and sex of the judges were established. As usual relationship between the recognition of emotional states and the personality traits of the judge, attracted a great deal of attention and the question of the capacity to infer emotional states being innate or acquired and general or specific became the centre of much effort and argument. (Bruner & Tagiuri, 1954)

The second group of investigators - mainly personality psychologists - were concerned with the evaluation of personality traits by observers. They wanted to see how a person perceives and judges another person's personality, what are the basic processes involved in this kind of judgement and what characteristics of the judge and the judged promote or impede the outcome of this judgement. Their interest in the field of person perception stemmed from the practical exigencies of their work. Rating being one of the main techniques of personality assessment it was of vital importance to find a common criterion against which the judgements of different judges could reliably be examined. Of parallel importance were the characteristics of the

good and poor judges of personality and the hypothetical ability or abilities underlying accuracy of judgement.

These practical approaches to the perception⁴or judgement⁵of people were preceded by, and later , carried on along with a heated theoretical argument as to the nature of the ability involved and the mental processes employed in perceiving people. A detailed account of these theoretical developments is beyond the scope of this study. However as social perception in the sense of the perception of the social has come to be used as an alternative for the theoretical stand point known as empathy, it seems desirable to present a historical account of this theory pointing out, whenever possible, its links with other important conceptual developments in the field of social psychology in general and person perception in particular.

The historical development of the concept of
"empathy".

Historically, the problem of the knowledge of other people had occupied a central position in the periodic arguments of the epistemologically oriented philosophers. The heart of this controversy has been centered round the perception of and insight into such peculiar aspects of human beings that have been known as their minds, the physical stimuli for which are either completely lacking or not readily available. Most of these philosophical discussions, however, have tended to be of a metaphysical and logical nature. But, as Allport (1937) has suggested, the explanations put forward by different schools of thought have largely been of two general types, some favouring inference as the key process and others emphasizing the role of intuition. Traditionally, Anglo-Saxon philosophers have tended to subscribe to the inference theory of understanding and the Continental philosophers have advocated intuition as the keystone of man's understanding of other mortals.

The young science of psychology inherited these philosophical controversies from its Anglo-German parentage, with the predominantly British associationists adhering to the principle of inference and the German Configurationists following the intuitive tradition of German idealism. Some German psychologists, caught between the contradictory demands of their

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scientific and philosophical loyalties, came out with conciliatory views which, while retaining inference as the basic mechanism, would integrate it with some form of intuition or immediate apprehension called for by the particular nature of persons as objects of understanding. Thus Wundt (1895), conceded that knowledge of other persons demands, in addition to inference, a process of re-thinking (UMDENKEN) of one's own personality in terms of the other's. This type of mental activity he held to be common among historians, actors, and others whose business it is to understand people. Although Wundt regarded this process of "putting oneself into another's Ego" as one of the major problems of psychology, he did not himself offer a closer analysis, nor did he abandon the inference theory.

Theodor Lipps' theory of "empathy" (Einfühlung) was another example of these conciliatory efforts. His theory of person perception was an extension of his general theory of aesthetic understanding. In 1897, the study of optical illusions led Lipps to the conclusion that the observing subject tends to project himself into the pattern. A vertical line, for example, gives the observer the sense of contending against gravity, while the angles and curves of many illusions make the subject expand, bend, or whirl. The theory has very important consequences for aesthetics. A man "feels himself into" the material of visual art, and the nature of

of the tension or relaxation which he experiences determines many aspects of his aesthetic response * (Murphy, 1949). In 1903, Lipps extended the principle to the perception of people.

"There are three spheres of knowledge. I know about things, about myself, and about others. The first type of knowledge has its source in sensory perception. The second in inner perception, that is to say in the retrospective view of the self with all its qualities, feelings and relations to its contents and to objects. The source of the third type of knowledge is empathy (Einfühlung)". (Lipps, 1903, p.187).

The mechanism underlying this type of understanding is a sort of motor mimicry of the other's action or state. Kinesthetic cues originally associated with subjective experience give rise to the same experiences whenever they recur. The process of imitation, however, is so spontaneous and unconscious that the resulting understanding approaches a high degree of immediacy, and the associative nature of the act of inference is largely lost sight of in the face of the demanding quality of the objective world.

On the face of it, empathy appears to be no more than "kinesthetic inference". Lipps (1908), however, had a much more complex view of it. Although the primary mechanism is one of projecting oneself into the other, of incorporating the other into one's self, nevertheless, the outer object is never lost sight

* Empathy, as a mode of aesthetic understanding, has been traced back to Aristotle who deals with it in connection with the problem of the metaphor (Rhetoric

of. The outer object is all the time there and inseparable from the subjective experience. Empathic meaning may be dependent upon our own past experiences, yet it has exclusively objective reference. Since there is no recognition that the activity is located in one's own body, it should not be considered to be a merely imitative process. There is no duality between the strain, the depression, or the excitement, which I feel empathically and the personality of the one whom I am seeking to understand. Lipps does not explain why we realize that the conscious life apprehended by empathy is the conscious life of another self. This objectivity is simply a "given" attribute inherent in empathy, marking it off from the ordinary process of inference. (Allport, 1937).

The ensuing forty years produced little in the way of the experimental investigation of Lipps' theory. With the consolidation of the division between intuitionist and inferential approaches to the understanding of people in the form of the psychological schools of Gestalt and Behaviourism such middle-of-the-way interpretations as empathy lost their *raison d'être* and were relegated to the emerging field of personality psychology. The 22 volumes of the Psychological Abstracts (1927-1949) contain no more than nine items

111, 2 (1411b, 34). The modern term Einfühlung["] was first used by Robert Vischer in 1873. His suggestions were taken up and developed in Germany by Theodor Lipps, Johannes Volkelt, and Karl Groos, in France by Victor Basch and in England by Vernon Lee. (Gilbert, K.E. & Kuhn, H. .A History of Esthetics. Bloomington: Indiana Univ.Press. 1953, pp.537-540).

under the title of empathy. Of these only two are of an experimental nature. (Gordon, 1934; Walton, 1936).

The concept itself, however, recurred in many a theoretical discussions of the problem of person perception. In 1913, Scheler (1954) discussed Lipp's' theory in connection with his own theory of sympathy. As Pear (1964) has suggested, the subsequent interest in the concept of empathy was actually the results of Scheler's rather than Lipps' influence. In effect, however, Scheler used the term only to indicate Lipps' theory and reject it as an explanation of the awareness on the part of one person of the feelings of another.

"It only needs to be emphasized that this acceptance and understanding does not come about as the conclusion to an "argument from analogy" (Lipps)". If this apprehension itself were only made possible (as Lipps believes), by a tendency to imitate and by the reproduction, thus evoked, of a previously experienced joy or fear (plus an empathic projection of what is reproduced into the other person), we should obviously be moving in a circle". (Scheler, 1954, pp. 9 - 11).

In Scheler's phenomenological analysis, Einfühlung or empathy is the name of the first and the most primitive form of sympathetic orientation denoting a reflex process of elementary motor mimicry. There is also a similarly named phenomenon - Einsfühlung or unipathy - which ranks much higher in the echelon of Scheler's eight forms of sympathy. This denoted an identification of feelings such as

that between lovers who feel keenly the joys and sorrows of each other. (Allport, 1954_a, pp 20 - 21) Becker's (1931) use of the term "empathy" in translating part of Scheler's work may have been responsible for the confusion between the notions of empathy and sympathy among the English-speaking psychologists. Part of the blame, however, must be borne by the shortcomings of English language in translating the subt^{te}ities of German language.

Psychiatrists soon grasped the importance of empathy in understanding and diagnosing their patients. Southard (1918) defined empathy as the process of "reading or feeling ourselves into the person, group, nation or race" and elaborated upon its social and clinical implications. He proposed to use empathy as an index for classifying the various forms of mental disorders and gave an introspective account of the use of this process in dealing with different forms of mental diseases.

Fraud (1922) while emphasizing the role of identification-based upon an important emotional quality - in bringing about the mutual ties between the members of a group as well as between them and the group leader, conceded the suspicion that his account of the problem might be "far from exhausting the problem of identification",

and that he might be faced by the "process which psychology calls 'empathy' (Einfühlung) and which plays the largest part in our

understanding of what is inherently foreign to our ego in other people" (pp. 65 - 66). In a footnote added to the end of his chapter on identification, he again returned to this matter and reiterated his suspicion.

"we are very well aware that we have not exhausted the nature of identification with these examples taken from pathology and that we have consequently left the riddle of group formations untouched. A far more fundamental and comprehensive psychological analysis would have to intervene at this point. A path leads from identification by way of imitation to empathy, that is to the comprehension of the mechanisms by means of which we are enabled to take up any attitude at all towards another mental life". (p. 70, n.2.).

This passage of Freud's although too tangential to convey much information, has been regarded as indicative of his recognition of the importance of empathy, and as such, has been frequently called to the witness box by psychoanalyst proponents of the theory. (e.g. Maddaloni, 1961). Allport (1937, p. 532; 1954, p.24) has interpreted Freud's reference as implying that people who have no particular emotional significance for us are understood through empathy but those who are of emotional value to us are understood through identification. This interpretation does not seem to read with the text of Freud's reference. Nor is it accepted by other more-

psychoanalytically oriented commentators (e.g. Murray, 1938).*

*Jung (1921) spoke of empathy-or "feeling-into" as his translator prefers to render it - in connection with the aesthetic correlates of his famous typology. Adapting Werringer's (1911, 1953) basic classification of aesthetic attitudes into empathy and abstraction, he argued that empathy or feeling-into is the characteristic aesthetic mode of the extrovert, whereas abstraction should be regarded as the peculiar way of aesthetic understanding of the introvert. To Jung, empathy, or feeling-into is "a kind of perception process distinguished by the fact that it transveys, through the agency of feeling, an essential psychic content into the object; whereby the object is introjected. This content, by virtue of its intimate relation with the subject assimilates the object to the subject, and so links it up with the subject that the latter senses himself, so to speak, in the object." (p. 359.) *

If Freud paid only a passing attention to the concept of empathy, Alfred Adler, with his emphasis on social and interpersonal rather than genetic factors in the shaping of human behaviour, made it part and parcel of the tenets of his school of Individual Psychology. In his-and his followers'-works, empathy was used in a much more general sense than was intended by Lipps; it left any implication of motor mimicry and became equivalent to identification and understanding.

* White (1925) adopted Jung's definition and stressed the role of empathy for understanding the "children, the savages and the insane". To him, empathy implies "a certain identification of the subject with the object. This identification does not necessarily imply sympathy nor does it partake of sentimentalism." P. 33)

"To see with the eyes of another, to hear with the ears of another, to feel with the heart of another".... For the time being this seems to me an admissible definition of what we call social feeling. We see immediately that this ability coincides in part with what we call identification or empathy. Individual psychology may claim as its contribution to have pointed out that empathy and understanding are facts of social feeling, of harmony with the Universe. This kind of identification or empathy always depends on the degree of our social interest; it is one aspect of social interest, and is absolutely essential to the achievement of social living. Sympathy is partial expression of identification. The ability to identify must be trained, and it can be trained only if one grows up in relation to others and feels a part of a whole." (Adler, 1928)

"To Adler (1930) "to hear, see or speak correctly means to lose one's self completely in another or in a situation, to become identified with him or with it. In this intended assimilation to another person or to a situation lies the whole meaning of comprehension." Adler criticizes Freud's notion of "identification" in the sense of seizing the role of another in order to gain a personal advantage. His notion of identification or empathy covers both aspects of Lipps' "Einfühlung" - either with persons or with inanimate objects. He has emphasized the role of empathy in dreams and in group psychology (Adler, 1928, 1930).

Rasey (1929) also emphasized the role of empathy in understanding others' attitudes, claiming it to be the method of individual psychologist. Baumgarten (1930) differentiated between the three forms of

a device for demonstrating empathy. Eight photos consisting of front, rear, and side views of a Mexican image with its arms in various upright positions were presented to the subject, who was asked to list the eight views as A,B,C,D,E,F,G,H. Starting with A, he was told to write down the answer to the question: Is it the right arm or the left arm which the statue is lifting in the air? It was found that some persons showed marked gesticulations before they could answer the question. Others showed slight movements of the hands, and some, whose movements were not publicly perceptible, reported that they had been aware of the twitching of their muscles. In Germany, the idea of empathic understanding had been established enough to justify a textbook coverage of its implications for direct education (Krägeloh, 1936). Nevertheless, both Kähler (1928) - implicitly - and Keffka (1935) - explicitly - criticized the motion of empathy and dismissed it in favour of a more direct and physiognomic theory of social understanding.

With the appearance of systematic textbooks on personality, empathy gained in importance and was subjected to more systematic treatment. Thus, Allport (1937) gave a detailed - although more or less critical - account of empathy as a process of understanding other personalities, putting it in a mid-way position between the intuitionist and inferential theories of understanding.

"From the point of view of the inference theory Lipps is guilty of adding an intuitive element in

the perception of the fremde seele; from the point of view of the philosophical intuitionist, he remains too close to the psychology of association. Actually, he stands midway between these views."

(Allport, 1937, p. 533)

To Murray (1938) personological diagnosis seemed as an appreciative process which does not proceed consciously by logical steps.

"Adams (1928) is perhaps correct in saying that it is an inference based on the assumption that a person who moves or speaks in a certain way must be experiencing subjectively what we experience when we behave in that way. The name for this process is "empathy", an involuntary occurrence whereby an observer experiences the feelings or emotions which in his personality are associated 1, with the situation in which the subject is placed, or 2, with the forms of behaviour that the subject exhibits. The complement of empathy is projection. We feel something (by empathy) and we imagine that the other person feels the same (projection). This seems to be the initial phase of all intuitive understanding. The two phases together might be called 'critical empathy'. (p. 247)"

As it is apparent, Murray's notion of 'empathy' has little in common with the notion as originally developed by Lipps and used by Allport (1937). Shorn of its kinaesthetic concomitants, empathy is reduced to a simple act of inference. More similar to the original usage of the term is Murray's

concept of "identification" which is defined as "consciously putting oneself in the place of another or allowing the flow of one's thought and feeling to follow his words" (p. 248). This process, Murray believes, furthers the empathic process. Yet all these three supplementary processes are not deemed sufficient to account for the various aspects of understanding others. But, to Murray, there is another, a fourth, emotional process that greatly aids understanding.

"It is not the resonating supplement, but the complement (reciprocal) of the subjects' inner processes. The E sets himself opposite to, rather than flowing with the subjects movements and words, and, becoming as open and sensitive as possible, feels how the subjects' attitude is affecting him (the E). In this way he apprehends the press (as it "hits" him). If he feels excluded he imagines Rejection in the S: if he feels that he is being swayed to do something he imagines Dominance: if he feels anxious or irritated he infers Aggression, and so forth. Finally, there is the catharsis (rather than the press) of the subject. An E can ask himself; what drive is the subject evoking in me? Anger and aggression in the E suggest the same in the S; compassion and tenderness suggest succorance, and so forth. For this, I cannot think of a less awkward term than 'recipathy' (reciprocal feeling rather than resonating feeling). Recipathy seems to be the mode most commonly adopted with strangers, whereas empathy is more appropriate for familiar,

allied objects. Perhaps recipathy is the preferred method of the introvert (to whom all men are strangers) and empathy the habitual mode of the extrovert (as Jung suggests). (p.248) Murray's interpretation of the relationship between empathy and identification casts some doubt as to the plausibility of Allports' interpretation of Freud's above-quoted passage. In this connection it must be recognized that Murray's outlook is more psychoanalytical than that of Allport's. As an indication of the lack of experimental work on empathy, it is interesting that Murray gives no factual data to support his theoretical classification of empathy and Allport resorts to indirect evidence from graphological studies to demonstrate the role of motor mimicry in understanding.

In 1939, Wiersma discussed the importance of empathic understanding - i.e. "arousing subjective reactions of others in ourselves through imitating their expressive movements or by following their train of thoughts" - for parents, teachers, psychologists and physicians. He also presented some evidence of the techniques adopted by 170 Netherlands physicians. Ames (1943) discussed the theory of empathy in relation to aesthetics, pointed out its deficiencies and emphasized the significance of art as a record of social change. The same topic was dealt with by Langfeld (1947).

Murphy's (1947) definition of the term as "putting oneself in the place of either a living or a non-living thing"(p.494) was more in line with the original usage of the term.

"Exactly as an individual puts himself in another's place, assumes his spatial position and its appurtenances, glows with his pride, suffers in his embarrassment, so he puts himself in the place of the pillar that is too slender to support the shaft, and he judges it inappropriate; he is pulled awry by the Picasso painting which tilts the house upon its foundation". (Murphy 1947. p.494).

Murphy finds no sharp line of cleavage between empathy and sympathy (p.493), but regards it as indispensable for explaining those more complex types of sympathy which are hard to explain in terms of conditioning (p.222).

This detailed historical account of the development of the notion of empathy from 1908 to 1947 is intended to highlight the dearth of experimental work in this area. Of the studies cited above - which have been traced through the 22 volumes of the Psychological Abstracts, 1927 - 1948, only the two studies by Gordon and Walton were experimental and both of these were concerned with the perception of objects rather than persons. This does not mean that the problem of knowing and understanding other people had been completely overlooked by the experimental - and the experimentally oriented-personality psychologists. What was neglected was not persons or personalities as such, but those subjective and idiosyncratic characteristics which mark persons off as special categories of objects. Instead, the field of person perception had been limited to the study of such static aspects as the recognition of emotional expressions or judgments of character. These early studies of person perception, however, did little in the way of investigating the deeper and more

human aspects of the persons as interacting, understanding and responsive individuals. In their zeal to follow the footsteps of the physical scientists, the experimental psychologists of personality restricted their area of investigation to the study of such facets of personality that were open and easily available to their none-too-crude methods of observation and data collecting. Persons and personalities were taken *bonna fide* at their face values and little attention was paid to such subjective and invisible factors as lay behind these objective manifestations and behaviours. This was in line with the dominant objective trend in the field of cognitive psychology in general. That the outcome of their efforts was not very encouraging is well attested by the concluding remarks of Bruner & Tagiuri's (1954) exhaustive review of the field.

"Studies on the "accuracy" of judging others have not progressed to a point at which firm substantial conclusions can be brought to bear upon a theory of judgement. The criteria employed have been too often of a consensual kind: accuracy is mostly defined as agreement with others regarding a person's characteristics... Accuracy may mean simply that a particular judge shares the most common bias found among his fellow judges. Taken from the point of view of a theory of judgement, relatively few firm conclusions can be drawn." (Bruner & Tagiuri, 1954. p.646)

Towards the end of 1930s there was already a movement among social and personality psychologists which culminated in the "perceptual imperialism" of

of 1940s and led to the re-emergence of persons as legitimate objects of psychological inquiry. The story of this movement - as far as it concerns the "persons" - has been admirably recorded in a chapter by Hilgard & Lerner (1951) and need not be entered upon here. The movement was the resultant of various forces working inside the domain of American psychology. In the first place, the successful transplantation of the Gestalt psychology in the U.S.A., had placed the psychology of perception right at the centre of the psychological currents. In the second place, Kurt Lewin's field theory - with its emphasis on such subjective concepts as the "life space" and "psychic systems" had demonstrated the application of Gestalt - field principles in the study of persons and interpersonal relations. The reinterpretation of Freud's dynamic psychology in terms of social and interpersonal influences rather than biologically fixed instincts, by such "left-wing" psychoanalysts as Otto Rank, Erick Fromm and Karen Horney had contributed much towards the achievement of this new outlook in personality psychology. Like many other aspects of their thought, Horney and Fromm's emphasis on social interaction and interpersonal relations in the development of personality is more a sign of their much-dénied Adlerian leanings than any orthodox Freudian orientation! Of equal importance was the emerging school of personalistic psychology as represented by G.W. Allport (1937) and later by Gardener Murphy (1947).

On the sociological side, people like C.H. Cooley and G.H. Mead had long stressed the importance of social

interaction in the development of the self-concept. To Cooley (1902) one's self-image is formed on the basis of perceiving how others react toward him, hence the characterization "looking-glass self". "In a very large and interesting class of cases the social" reference takes the form of a somewhat definite imagination of how one's self appears in a particular mind, and the kind of self-feeling one has is determined by the attitude toward this attributed to that other mind. A social self of this sort might be called the reflected or looking-glass self. Each to each a looking glass,

Reflects the other that doth pass".

"The self that is most important is a reflection, largely from the minds of others...."(Cooley, 1902.p.)

It is interesting to note that McDougal, despite his over-emphasis on instincts, has proposed a very similar explanation for the development of the self and the self-regarding sentiment.

"For we find the idea of the self and the self-regarding sentiment are essentially social products; that their development is affected by constant interplay between personalities, between the self and society; that, for this reason, the complex conception of self thus attained implies constant reference to others and to society in general, and is, in fact, not merely a conception of self, but always of one's self in relation to other selves,"(McDougal, 1918, p.185.).

Even more interesting is McDougal's account of the way a child comes to perceive or understand other persons in his environment:

"As the differentiation of persons and inert objects proceeds, persons continue to be the more interesting to the young child for they continue to be the main sources of his pains and pleasures and satisfactions....But much more important than the actions of the people about him are the feelings and emotions that prompt them...(The child) widens his experience and his understanding of the emotional attitudes and motives of others by copying them in his imitative play; he puts himself into some personal relations he has observed, assumes the part of parent or teacher or elder sister, makes some smaller child, a dog, a cat, or a doll, stand for himself, and acts out his part, so realizing more fully the meaning of the behaviour of other persons. In this way the content of his idea of his self and its capacities for action and feeling grows hand in hand with his idea of other selves....He gets his idea of his self in large part by accepting the ideas of himself that he finds expressed by those about him." (pp. 190 - 191).

Besides its striking similarity to the above-quoted views of Cooley, McDougal's theory seems to foreshadow the current notion of interpersonal perception as understood by the term empathy or social perception. It is also a forerunner of the later developments in role theory and the social significance of play. It is notable that McDougal does not mention the term "empathy", nor any of the later writers on this subject - to the extent I have been able to follow - have named him among the founding fathers of their creed. Another significant point in McDougal's passage is his explicit

recognition of the importance of subjective feelings and emotions behind the overt actions of people. By far the most elaborate and influential exposition of the social theory of self is that of G.H. Mead whose posthumous book (Morris, 1934) has provided intellectual stimulation to much of what has been done by the "new-look" psychologists. Mead's general stand is a combination of the social philosophy of John Dewey and a slightly moderate version of Watson's behaviourism. He has called himself a "Social behaviourist". To him, everything human is necessarily social in nature and dependent on other persons. "The self is something which has a development, it is not initially there at birth, but arises in the process of social experience and activity"(p. 135) Self-awareness is indirect and depends on the awareness of the others, for an individual "enters his own experience as a self or individual not directly or immediately, not by becoming a subject to himself but only in so far as he first becomes an object to himself just as other individuals are objects to him or in his experience; and he becomes an object to himself only by taking the attitudes of other individuals toward himself within a social environment or context of experience and behaviour in which both he and they are involved".(p.138) Signs of an empathic notion of understanding is already apparent in this formulation of self development through taking the attitudes of others. The view is expressed more fully in a footnote describing what Mead calls "social intelligence".

"It is generally recognized that the specifically social expressions of intelligence, or the exercise

of what is often called "social intelligence" depend upon the given individual's ability to take the roles of, or "put himself in the place of" the other individuals implicated with him in given social situations; and upon his consequent sensitivity to their attitudes toward himself and toward one another. These specifically social expressions of intelligence, of course, acquire unique significance in terms of our view that the whole nature of intelligence is social to the very core - that this putting of one's self in the places of others, this taking by ones self of their roles or attitudes, is not merely one of the various aspects or expressions of intelligence or of intelligent behaviour, but is the very essence of its character. Spearman's "X factor" in intelligence is simply this ability of the intelligent individual to take the attitude of the other, or the attitudes of others, thus realizing the significations or grasping the meanings of the symbols or gestures in terms of which thinking proceeds; and thus being able to carry on with himself the internal conversation with those symbols or gestures which thinking involves."(p. 141, f.n. 3).

Mead's notion of social intelligence as defined above has an unmistakable resemblance to what has come to be known as social perception or empathy by present-day psychologists. Wider implications of this role-taking hypothesis of communication, however, ~~hypothesis~~ have little been investigated by later workers.

The first repercussions of these converging theoretical developments found expression in the interpersonal theory of psychiatry advanced by H.S. Sulligan (1947). His repeated emphasis on persons

and interpersonal relations did a great deal to reintroduce persons to psychology. Reading his book, one gets the impression of an obsessive preoccupation with persons and interpersonal relations. To Sullivan, (1947) psychiatry is the study of interpersonal relations (P.v). Every form of behaviour, even that of the acutely schizophrenic patient, "is made up of interpersonal processes" (p.7)., and personality is no more than "the relatively enduring patterns of recurrent interpersonal situations which characterize a human life" (p.34). He is well aware of the complications besetting the perception of persons, particularly of those arising from the perceiver's past experiences with other persons and his attitudes regarding himself; ... "It is not that as ye Judge so shall ye be judged, but as ye Judge yourself so shall ye Judge others." (p.6).

Among the network of interpersonal relations spanning the life of an individual, the earliest and by far the most significant are those obtaining between an infant and its mother. The main medium of communication in those early months of life is a sort of emotional relationship that Sullivan calls empathy. He defines "empathy" as "the peculiar emotional linkage that subtends the relationship of the infant with other significant people" (p.8). It is a kind of "emotional contagion or communion" which precedes "signs of understanding of emotional expression" (Ibid). The main function of empathy at this stage is the communication of the basic feelings of anxiety and satisfaction between the infant and the mothering person. In his later

teachings - published posthumously - Sullivan has summarized his views in the following terms:

"The tension of anxiety, when present in the mothering one, induces anxiety in the infant. The rationale of this induction - that is, how anxiety in the mother induces anxiety in the infant - is thoroughly obscure....I bridge the gap simply by referring to it as a manifestation of an indefinite - that is, not yet defined - interpersonal process to which I apply the term empathy." (Sullivan, 1953, pp 41 - 42). As the child grows older, empathic communion gives way to verbal communication and perception. As it appears, Sullivan's notion of empathy has little in common with the one we have been dealing with so far. In effect, his conception of empathy seems to be based on a biological mechanism similar to the so-called Innate Releasing Mechanisms of the ethologists. But, even in the case of animal behaviour, the concept of IRM is beset by many conceptual and experimental problems (cf. Hinde, 1959). Sullivan was well aware of the mysterious nature of his concept of empathy and advised his readers to remember

".... that there is much that sounds mysterious in the Universe, only you have got used to it; and perhaps you will get used to empathy."

(Sullivan, 1953, p.42).

Sullivan's thesis was accepted by many other "dynamic" psychiatrists and psychotherapists. Thus, Masserman (1946) discussed the importance of "empathic or intuitive communication" in addition to the purely

verbal, transfer of ideas and attitudes (p.225).
Haskins (1946) pointed out that schizophrenia may be due to a failure in empathy. At about the same time Client-centered therapists were stressing the role of empathy in therapeutic relationships (Rogers,1951).

The conceptual developments outlined above, along with the new look psychologists' enthusiasm for anything connected with perception, had set the stage for the triumphant re-entry of empathy into the realm of brass-instrument experimental psychology in late 1940s. Thus, when, in 1950, Cottrell, in his presidential address to the American Sociological Society, spoke of "empathic responses" as "one of the most fascinating and challenging as well as one of the most critical processes in the whole range of social psychology" which social psychologists had succeeded to ignore, he was in effect heralding an already full-fledged movement. In fact, as far back as 1942, Cottrell himself had included an empathic process of understanding others - in a sense similar to that implied by Mead's "social intelligence" - in his analysis of situational fields in social psychology. He had also supervised Dymand's doctoral work which may be regarded as the first experimental study of empathy as a process of understanding others.

Before going on to describe Dymand's study, however, mention must be made of certain very significant contributions to the field of person perception by a number of Gestalt psychologists. As suggested above, both K hler (1928) and Keffka (1935) had stressed the

configurational properties of persons as objects of perception. To them, the Gestalt theory of direct apprehension based on the notions of the Ehrenfels qualities and isomorphism was as true of ~~the~~ persons perception as of any other kind of perception, there being no need for such second-order mechanisms as inference or empathy. The experimental proof of these assertions, however, had to wait until mid 1940s. In 1944, Heider & Simmel showed that certain sequences of movements of small circles and triangles in a moving picture evoked unmistakeably anthropomorphic responses in their viewers: the triangle was seen as "chasing" or "hitting" the circle and the circle as "hiding" to escape. In the same way a large triangle was described as "aggressive" the smaller triangle as "heroic" and the circle as "timid" and "feminine". These findings were corroborated by similar anthropomorphic inferences found in Michotte's well-known study of causal perception (Michotte, 1946). In the same way Asch's (1946) pioneer study of the process of impression formation revealed the importance of some central traits in building up a picture of the other's personality. Asch's findings drew the attention of psychologists to the importance of first impressions in judging others' personalities and opened a new chapter in the study of person perception. Despite a number of methodological criticisms made of and alternative interpretations offered for Asch's work, his findings have been largely confirmed by later workers. (cf. Veness & Brierley, 1963).

These studies went a long way to rid the studies of person perception of their preoccupation with the accuracy

of judgment. Instead, it was demonstrated that inaccuracy of Judgment and misperception were as important and worthy of study as any other aspect of interpersonal behaviour. The point had already been hammered by projective psychologists and the experimental psychologists had collected some interesting data bearing on the distortion of perception by the so-called mechanisms of ^{Perceptual} defence. (Brown, 1961).

The appearance, in 1948, of Dymond's study of "empathy" marked the beginning of a new phase in the field of social perception. Dymond's definition of empathy as "the imaginative transposing of oneself into the thinking, feeling, and acting of another and so structuring the world as he does" (Dymond, 1949) was much broader than those put forward by Lipps, Allport and Murray. It was more similar to and influenced by Mead's definition of role taking as quoted above. Her test of empathy consisted of asking a subject to predict the ratings and self-ratings of another subject on a six-item rating scale. The empathy score was determined by comparing the predictions against the actual ratings and self-ratings of the subjects. She found the amount of accuracy to be well above that expected on a purely chance level.

Like so many other things under the sun of psychology, Dymond's test of empathy could not be credited with novelty. A similar technique had already been employed by Bender (1935) to test his own understanding of persons he had interviewed by attempting to predict their scores on various personality tests. In the same manner, Winslow (1937) had asked Judges to predict how

acquaintances would fill in a questionnaire on political attitudes. Neither of these workers, however, had called their techniques a measure of empathy. Nor had they paid much attention to the processes and the psychological implications of their techniques. The time was not yet ripe for such conceptual developments.

The novelty of Dymond's approach was that, for the first time, it shifted the attention from the objective world of the judges to the subjective world of the judged. Instead of being asked to rate their subjects as they saw or as they believed them to be, the judges were required to guess or predict the potential self-images of their subjects in terms of a rating scale. This was well in line with the prevailing mood of the time we have just summarized. More important was the pragmatic implications of Dymond's operationally defined measure of empathy, which seemed to hold great promises for the future. No wonder, then, that this new approach was eagerly - and at first, uncritically - adopted by many other psychologists and journals of psychology seemed to be inundated with experimental studies of empathy done on variants of Dymond's technique. As a result, the term "social perception" became more or less restricted to studies of empathy on the line proposed by Dymond.

As a sign of the ripeness of the time, it is significant that at about the same time that Dymond published her study, Kerr & Speroff (1947 - 1954) published an "Empathy Test" purporting to measure "Massemopathy" or "the ability 'to feel into' the average

or hypothetically average person's situation and so react". The test consists of asking the subjects to rank (a) the popularity of 15 types of music for the non-office factory workers of the U.S.A., (b) the circulation of 15 well-known current magazines, and (c) the prevalence of ten types of annoyances. The key is based on certain empirical facts in each case (Kerr & Speroff, 1954). The test has been employed in a number of industrial situations and the authors have claimed a very high degree of validity and reliability for their measure. Some of their claims are very impressive indeed. Empathy has been found related to such diverse abilities and characteristics as automobile salesmanship, (Tabolski & Kerr, 1952) accident proneness (Speroff, 1953), supervisory knowledge (Speroff, 1954) and Union leadership (Van Zelst, 1952). However, workers not associated with the authors have failed to corroborate these findings. (Thorndike, 1959).

Kerr & Speroff's Test of Empathy, is different from the test proposed by Dymond in that the former is more concerned with the ability to comprehend the public taste or the preferences of certain "generalized others" - to borrow Mead's term - whereas the latter is more interested in the others as specific individuals. There is little reason that the two abilities should necessarily be correlated. In fact, studies employing both measures of empathy have repeatedly produced insignificant correlations. (Siegel, 1954; Patterson, 1962; Mahoney & Auston, 1958). In view of the post-new look psychologists' emphasis on "persons" Dymond's

technique has been preferred by the overwhelming majority of psychologists working on empathy and the use of Kerr & Speroff's Test of empathy has been mainly limited to those interested in the commercial production of psychological gadgets.

The basic procedure has remained the same; a person is asked to predict or guess the responses of another person ~~and~~ in a given situation. The situations or media of prediction have varied all the way from a rating-scale to a personality questionnaire (Bender & Hastorf, 1950), an attitude scale (Chowdhury & Newcomb, 1952), an interest blank (Gage, 1952) or a value inventory (Wertheimer, 1960). Others have employed sociametric or near-sociametric measures. As the first part of this study is on a similar line, the field will be discussed in full detail separately at the end of this chapter.

The predictions acquired in this manner have been interpreted in various ways. In the majority of cases, they have been compared against the actual responses of others and the deviation scores thus obtained have been used as indices of empathy. Another group of workers - headed by Riedler (1953, '54, '58) - have employed the predictors' own responses as the criteria of Judgment and have calculated indices of assumed similarity (AS) or assumed dissimilarity. Others have employed this same technique to investigate the psychoanalytic concepts of identification, projection and transference (cf. Brannen, 1958). Still another group of students have interpreted it as a measure of role-playing ability (Sarbin, 1954).

In the same vein, the ability under study has been called by such different names as "empathic ability," "Social sensitivity," "interpersonal sensitivity," "insight" "clinical competence" and the "ability to understand others". This is an indication of the experimental richness of Dymond's technique, which, to a large extent, is due to the conceptual vagueness and imprecision of her operational definition.

Early workers were so strongly impressed by the operational simplicity of Dymond's test that they paid little heed to the none-too obvious short-comings of her operational approach. Part of this was doubtless due to the high expectations created by the new-look psychologists regarding the concept of empathy or social perception. For the rest, the psychological climate of America must be taken as responsible. Bronfenbrenner has put the situation very succinctly:

"For an American psychologist, nothing is so attractive as an operational definition. And when such a definition can be combined with an "objective" procedure yielding a numerical score the temptation to gather data is virtually irresistible. Nowhere is this tendency more clearly evidenced than in the field of interpersonal perception, where the ready availability and adaptability of questionnaire methods for measuring correspondence and discrepancy in social perceptions have resulted in the wide, if not always wise, application of these techniques to a variety of problems," (Bronfenbrenner, 1958,110)

The old idea of accuracy has again crept in and occupied more than its share of the psychologists' time and effort. This has been accompanied by an enthusiastic search for the personality correlates of this assumed "ability" as well as its effects on various aspects of interpersonal behaviour. As Cronbach (1955) has suggested, this over-enthusiasm for the pragmatic implications of interpersonal sensitivity has blinded many researchers to the very fact of what they have meant by the term empathy or social sensitivity. They seem to have taken the term operationally defined as "that which is measured by a test of empathy" and plunged head on into a sea of practical inferences and correlations revealed by it. Reviewing the field in 1957, Cartwright (1957) likened these early investigations to a driver racing wildly over unpaved roads, with little concern over the condition of his steering wheels and tyres. The publication in 1955 of Gage & Cronbach's (1955) and of Cronbach's (1955) critical evaluation of the field was ^{an} opportune and timely "danger sign" erected in this wasteful path of psychological endeavour. Even before the publication of Cronbach's critical analyses, some workers had indicated some of the uncontrolled factors vitiating the results of Dymond's test of empathy. As early as 1950, Bender & Hastorf found that much of what had been regarded as empathy was in fact the result of projection, in the non-analytical sense of the term. It was quite apparent that when a person was required to predict the responses of two other people on a test like Allport & Allport A - S Reaction Study, his predictions

were much more highly related to each other and to the predictor's own score on that test than they were to the score of the people predicted for.

In a second study, Hastorf & Bender (1952) proposed a measure of "refined empathy" which ~~was~~ purported to partial out the effect of projection. This was achieved by subtracting the empathy score (i.e. the deviation between the S's predictions and the O's actual responses on a test) from the projection score (i.e. the difference between the S's predictions for O and his own responses.) They found that of the 50 predictors, 20 were closer to their associates' score and thus might be called "empathizers", while 28 were closer to their own score, hence to be called projectors. The remaining two had equal projection and empathy deviation scores. Thus the phenomenon of projection seemed to be more prevalent. However, the interpretation of these results ~~is~~ made difficult by another finding that the top ten projectors were in fact more similar to their associates than were the ten top empathizers. Moreover, there appeared to be a rank-order correlation of .30 ($P < .05$) between the two measures of raw and refined empathy.

Hastorf & Bender recognized the shortcomings of their measure of refined empathy by stating that "It may be overly severe to grade empathic ability by means of subtracting the projection score, since it would be dangerous to label as projection all the overlap between the prediction and the predictors' own answers". (p.575). However, they felt that without some correction for projection, attempts to measure empathy do not seem to

to make psychological sense. One way to control the influence of similarity was to obtain predictions for a number of associates with varying degrees of similarity to the predictor. In a further study, Bender & Hastorf (1953) asked 50 S's to predict the responses of 4 persons, all well known to them, on a 4 2 item scale. Four deviation scores were obtained from the data thus collected for the variables of similarity, projection, raw empathy and refined empathy. It was found that while the raw empathy score was significantly correlated with similarity ($r = .53 \pm .07$) the refined empathy score showed only a slight negative correlation, $r = -.12 \pm .09$, with empathy. Furthermore, it was found that the refined empathy scores showed a fair degree of consistency, although the greatest consistency was shown by the projection scores. There was also some degree of consistency in the raw empathy score which the authors attribute to their Ss' tendency to select uniformly similar or dissimilar associates. Bender & Hastorf interpreted these findings as a justification for the use of refined empathy score, as an operational measure of empathic ability. They further argued that the refined empathy scores were consistent enough to be regarded as measuring a generalized ability.

A later study by Hastorf, Bender & Weintraub (1955), however, revealed that the refined empathy score was crippled by the operation of such response patterns as the tendency to subscribe to end-scale responses on self-rating and to mid-scale responses in predicting

others' responses. It was found, for example, that Ss high in the refined empathy score tended (a) to give end-scale self-responses, (b) to choose associates who give midscale responses, and (c) to predict midscale responses for these associates. In contrast, Ss scoring low in refined empathy tended (a) to give midscale self-responses (b) to choose associates who give more end-scale responses, and (c) to predict midscale responses for their associates. These findings led the authors to impugn the refined empathy score as a true measure of empathic ability. The implications of these findings for interpersonal relations have not been given the attention they deserve and the relationships between Real Similarity, Assumed Similarity (or projection) and Accuracy of Perceptions still remain a moot question.

A similar response tendency was reported by Lindgren & Robinson (1953) who found that there was a definite tendency for one of the positions in the scale to be preferred with regard to each item. This observation led them to the hypothesis that perhaps respondents were actually not empathizing but were responding to a cultural norm or stereotype. Empathy scores derived from a comparison of the subjects' predictions against a normative key based on the response tendencies of 100 Ss correlated from .74 to .56 with the original empathy scores obtained by subtracting the predictions from the actual responses of others.

Gage & Cronbach's (1955) conceptual and methodological analysis of the area of interpersonal perception was

was by far the most deep-going evaluation of the operations underlying the new notion of empathy. They questioned the prevalent notion of empathy as a general ability indicating that the variety of tasks involved and operations employed hardly justified such an assumption of generality.

"If we ask a person questions about others where he has had ample opportunity to learn the answers by experience we are primarily measuring his knowledge. When we present him with questions which he cannot answer on the basis of past experience alone, we are measuring ability to acquire new knowledge. But different abilities are required, depending upon whether the difficulty he faces is that of gathering information, or of drawing inferences, or both." (Gage & Cronbach 1955, 413)

Of equal importance is the kind of others for whom predictions are made. Unless this is explicitly specified, the investigator can be suspected of a bias towards a generalized ability. This same point has recently been emphasized by Crow (1957a) who has argued that the principles of the random sampling of subjects should be extended to the objects of study in person perception in order to justify any sort of generalization. Another point emphasized by Gage & Cronbach was the intricate relationship between the different components of accuracy. They have demonstrated that of the three variables of Assumed Similarity, (or projection) Real Similarity and Accuracy only two were independent.

Whenever two persons are similar in respect of a trait and tend to assume similarity in predicting each other's responses they are logically bound to be accurate and vice versa. This makes Hastorf & Bender's (1952) measure of "refined empathy" conceptually untenable.

Another important point in Gage & Cronbach's (1955) analysis is the differentiation between the two components of an accuracy score, to wit, the "stereotype accuracy" and "differential accuracy". The former refers to the individual's ability to predict the pooled responses of a given category of persons, whereas the latter refers to his ability to differentiate among individuals within the category. The two components are not necessarily correlated with each other and must be investigated separately. As will be seen in the next section, the differentiation of the accuracy score into these two components has been fully borne out by later studies.

At a more technical level, Cronbach (1955) demonstrated that the ordinary accuracy score is the sum of four components which he called Elevation (E), Differential Elevation (DE), Stereotype Accuracy (SA) and Differential Accuracy (D.A.) By Elevation was meant the average of a Judge's predictions over all items and all objects of judgment which reflects his way of using response scale. By Differential Elevation was meant the degree of

closeness between the judge's average prediction and the subject's central tendency of response, all items pooled and judge's central tendency of response held constant. Stereotype accuracy or "accuracy in predicting generalized other" described the judge's ability to predict the norm for objects and depended on his knowledge of the relative frequency or popularity of the possible responses. Finally, Differential Accuracy was defined as the ability to predict differences between objects on any item. Apparently only this last component could be regarded as representing a pure measure of interpersonal sensitivity and Cronbach (1955, & 1958) has proposed special statistical techniques for partialing out and studying this component.

In a similar manner, Cronbach has distinguished seven aspects in the performance of the Judge and four components in the ordinary Assumed Similarity score. For further description and mathematical derivation of these, the original article must be consulted. Having presented his detailed analysis, Cronbach (1955) concludes that: "All results to date lead us to doubt whether accuracy in differentiating personalities of others can be reliably measured, where reliable variance is found it seems to result from some constant mental set." (p.185).

The most significant practical implication of Cronbach's mathematical analysis is that the variation in predictions should never exceed the variation in true responses, and should ordinarily be much smaller. This principle indicates that there is an optimal degree of differentiation in making judgments and

and hence, contrary to current emphasis, teachers and therapists should be cautioned not to exceed this optimal level of differentiation in their dealings with "individuals". In fact a study by Crow (1957 b) has shown that training programmes devoted to increasing accuracy of interpersonal perception run the risk of decreasing accuracy when they increase the trainee's responsiveness to individual differences.

In a later paper, Cronbach (1958) has criticized the use of dyadic and global indices in the study of interpersonal perceptions on the grounds that the former leads to an unparsimonious description of events, is laden with artifacts, disregards the direction of differences in perception, treats regression effects as if they represented real changes and it assumes an interval scale, while the latter - a global index - gives rise to a false impression of generality in the absence of sufficient evidence and overlooks other kinds of significant relations. Instead, he proposes to replace the global index with a series of components of perceptual relation, and a separate analysis for each of these components, taking into account the traits being perceived, the constant tendencies in the perceiver - his perceptual space - with respect to those traits, and finally the effect of the particular other as a social stimulus. The full implications of these proposals, however, have not yet been experimentally worked out.

The critical evaluations reviewed above did a great deal in clarifying the concept of empathy and shearing it from the operational artifacts attending its early development. Despite all these, however, the notion of empathy as an ability or skill has

has lingered on, and the question of its generality or specificity has given rise to much controversy. As noted above, early workers on empathy took the generality of the ability under study for granted. This was, at least partly, due to the implicit idea of generality inherent in the current definitions of ability, where an "ability" is taken to imply "the existence of a group or category of performances which correlate highly with one another, and which are relatively distinct from (i.e. give low correlations with) other performances" (Vernon, 1956, p.131). Another part of this assumed generality of empathy was a residual of the former studies of the good Judges of personality. Reviewing the literature in 1937, Allport had reached the conclusion that: "It seems more of an error to consider the ability entirely specific than to consider it entirely general," (p. 512 Par. 8). The same conclusion had been accepted by most later workers (Bruner & Tagiuri, 1954, 645; Taft 1955, p.6.).

Some workers in the new field of social perception have in fact found experimental support for the generality of empathic ability (e.g. Gage, 1952, Stone, Leavitt & Gage 1954). But as the above discussion of Cronbach's work would indicate, most of these findings are suspect of being artifacts of the complicated and unanalytical designs of experiment adopted. Moreover, not all studies have produced the same result (e.g. Crow, 1954). Even those who had found evidence of generality had recognized the necessity of differentiating between the two aspects of the ability

to predict the responses of others in general and the ability to predict the responses of specific others. (Stone, Leavitt & Gage, 1954).

In 1955 Cline, presented 316 Judges with sound-films of four persons under stress interviews, and asked them to a) post-dict the real-life behaviour of the interviewees in certain situations, and b) to predict their self-ratings in terms of an adjective checklist. The correlation between the two measures of accuracy varied all the way from $.22 \pm .17$ (a nursing trainee group. $N = 43$) to $.44 \pm .10$ (College sample $N = 109$). Crow & Hammond (1957) administered 15 measures of interpersonal perception accuracy to 65 senior medical students. Only 8 of the 105 correlations produced by these measures were significant at the .05 level of confidence and two of these were negative. Three repetitions of the test at six months intervals (using 72 new Ss) revealed (a) significant but low relationships among accuracy scores over time, and (b) significant and high relationships among the response-set scores over time. The results were interpreted to mean that response sets were more stable elements of the S's performance than differential accuracy.

Bronfenbrenner, Harding & Gallwey (1958) differentiated between two kinds of abilities in their Judges: (1) Sensitivity to the generalized other, and (2) Interpersonal sensitivity, or the ability to predict the feelings, attitudes or opinions of a given individual about an issue or another person. They found that the two abilities are largely independent.

Those who are good Judges of "the public" are not necessarily good Judges of "the person". It was also felt necessary to differentiate between four kinds of sensitivity in terms of the refent of judgement on prediction. These are a) first-person sensitivity i.e. the recognition by ego of how others feel towards him; (b) second-person sensitivity, or an ego's awareness of how another ego feels about itself; (c) third-person sensitivity, which deals with an individual A's recognition of another individual's, B's, feelings towards a third individual C, and (d) non-personal sensitivity such as that represented by A's recognition of B's feelings about certain physical objects. Of these, the measures of first person sensitivity showed a corrected reliability of .67 for two alternate forms of the test based on different items. However, it seemed necessary to distinguish between sensitivity to one's own sex and sensitivity to the opposite sex. Yet in all instances there was evidence for the existence of genuine abilities in interpersonal perception.

Quereshi (1959) comparing the self-ratings of students and their estimates of their father's self-ratings found that what generality most of the deviation scores thus obtained possess can be attributed to overlap between the content areas on which the ratings were based. Appreciable drop in generality was consistently found when the sign of difference was disregarded. The generality of D score, however, seemed to justify its use as a defensible global measure. Reliability estimates were also appreciably reduced in magnitude when the signs of the distance measures were not taken into consideration.

Cline & Richards (1960) using a refined version of the technique employed by Cline (1955) found enough consistency between the predictions of their Judges over various media of prediction and different others to justify the existence of a general ability to perceive others accurately. This general ability, however, consisted of two (at least) independent parts: Sensitivity to the generalized other and interpersonal sensitivity in Bronfenbrenner's terminology or Stereotype Accuracy and Differential Accuracy in Cranbach's terminology. These components were interpreted as reflecting the factorial complexity of the over-all Judging scores. Four replication studies by Cline & Richards (1961) with somewhat revised measures of judging ability have mainly confirmed their previous findings of a low but consistent degree of generality of judging ability. They found the average inter-instrument correlation between different measures of the ability in question to be .25 and the average corrected part-whole correlation between individual judging instruments and a total judging score was .41. These correlations, although significant beyond .01 level, are too small to be impressive. O'Connor (1963) has criticized the findings of Cline & Richards on the grounds that as the aim of their studies was to see if a general ability to judge did in fact exist, the use of a technique (i.e. internal consistency item analysis) the aim and effect of which is to build a general factor, becomes a critical error in method. A similar logic could be employed to serve a directly opposite approach.

Cline & Richards (1963), while defending the soundness of their technique, have acceded the possibility that while their scale might be reliable its construct validity remains to be demonstrated. In other words, they admit that their procedure, while necessary, is not sufficient.

Allport's (1961) survey of this area is ended by a verbal repetition of his 1937 position.

"To sum up, although we do not know just what subtypes may be involved in the ability to judge others, and although we have considerable difficulty in proving that judgements are good or poor--still the preponderance of evidence favours the view that the ability is to a considerable extent generalized. It is certainly more of an error to say that the ability is entirely specific than to say that it is entirely general". (Allport, 1961, 506).

Vernon's (1963) review, though decidedly more cautious, leads to no firm conclusion regarding the nature of this ability. Bug Guilford (1959) has envisaged the possibility of finding a new dimension or factor of intellect to account for the findings on social intelligence or empathy.

As to the personality correlates of empathy, there are a number of easily available and more / or less

up-to-date reviews (e.g. Allport, 1961; Vernon, 1963; Taft, 1960; 1956; 1955; Tagiuri & Bruner, 1954) which make a new attempt unnecessary. However, some of these findings will be considered later on in connection with our own study.

SOCIOMETRIC PERCEPTION - As suggested above, one of the various branches of social perception is that of perceiving the network of interpersonal feelings, likes and dislikes or attractions and repulsions - in a group. With the advent of sociometry in 1930's the affective side of group behaviour became the centre of much interest and emphasis. The passing of three decades has but sharpened this early interest and sensitised more and more psychologists as well as other students of man to its vital importance. Thus not only sociometry has become of "singular importance to the empirically oriented social psychologist" (Lindzey and Bergatta, 1954), but sociologists, psychiatrists and educationists too have come to realise the place of positive or negative interpersonal feelings and relations in the development of man's personality and in the effective functioning of his groups.

On the one hand, an eminent sociologist, G.C. Hamans

(1950) has employed interpersonal feelings of like or dislike - or "sentiments" as he prefers to call them - as one of the building blocks of his social system, the two others being activity and interaction. It is true that Hamans has adopted a more behaviouristic approach in his later writings (Hamans, 1961) and has re-structured his system on the basis of elementary economics and the concept of reinforcement as developed by the Skinner School of behaviourism. In this new system activity has gained the upper hand, rendering sentiment and interaction into special classes of activity. Nevertheless, sentiments - redefined as "the activities that the members of a particular verbal or symbolic community say are signs of the attitudes and feelings a man takes toward another man or other men." (p.33) - still have their place in his system. Other sociologists have stressed the importance of interpersonal relations in the development of the self. The point is well summarised by Kingsley Davis (1948): "Since it is built out of the attitudes of others, the self cannot help but place a value on these attitudes apart from or in spite of organic satisfaction. This is especially true of one kind of attitude - the attitude of

approval and disapproval; for this offers a key to much else. It is only through the approval of others that the self can tolerate the self." (Sprett, 1958, p.27).

On the other hand, as famous a psychiatrist as H.S. Sullivan (1955) has founded a whole theory of psychological illness and treatment on a basis of interpersonal relations. Among Educationists, people like Benney, Northway, Gronlund and - in this country - Fleming, to name only a few of them, have stressed the affective aspects of school life and have demonstrated the value of sociometric techniques in reorganising the school into a centre of warm human relations. That these assertions have not been mere assertions arising from idle arm-chair theorising of the inhabitants of Clinicia (cf. Cronbach, 1954) - have been amply demonstrated by such respectable and trustworthy techniques as factor analysis. At least four studies of this kind - (Wherry 1950; Couch & Carter, 1952; Clark, 1953; and Hempnill & Coons, 1957) - based on mutual ratings by members of small groups concur on the presence of three basic factors in group behaviour - influence and initiative, task com-

petence and like-dislike. While the first two factors may not always apply to all groups, the last one must always be considered. (Tagiuri, 1960) These conclusions are further confirmed by Osgood and his students' finding of an "evaluative" factor occupying the larger part of the so-called "semantic space" (Osgood, Suci & Tannenbaum, 1957). In view of these facts no wonder that the study of attitudes towards other people - or "interpersonal attraction" as Newcomb calls it - has received the lion's share of all studies in the field of attitudes. (Newcomb 1956).

The conventional sociometric test provides two types of information regarding the affective relations in a group: how each group member feels towards others, and how others feel towards him. The picture thus provided is incomplete in that it does not include anything about the subjective side of the choice process. One's choice behaviour - his likes and dislikes - is more a product of what he perceives in his human environment than what is objectively revealed by that environment. Thus by asking for the perceptions of the subjects as well as their choices and/or rejections, a more complete picture of

their relations can be obtained. This is the rationale behind perceptual sociometry.

Early sociometric studies showed little interest in this perceptual or subjective side of sociometric choice and rejection. They were mainly interested in the sociometric process as a piece of objective behaviour or performance, and did little in the way of investigating its perceptual or representational basis in the minds of those concerned. This was partly because the process of perception had not yet been recognised as a factor in determining social behaviour, and partly because the perceptual aspect was taken for granted by the pioneers of the sociometric movement. Moreno's (1953) definition of "tele" as "two-way empathy" ensuring the minimum transfer of meaning between two persons reflected this implicit recognition of the subjective facet of interpersonal choice or rejection. His later comments make this point more explicit: "Tele is the factor responsible for the increased mutuality of choices surpassing chance possibility and for the increased rate of interaction between members of a group. Tele operates on the wish level, the social desire level, the choice level, and the behavioural

level of a relationship. It has, besides a conative, also a cognitive aspect. Choice sociometry and perceptual sociometry supplement one another". (Moreno, 1960, p.18).

The relationship depicted by a sociometric test can be viewed from two different points: from the point of view of the people involved and from the vantage points of outside observers. How accurately can an outsider predict the choices and rejections of a group? The study of this problem began much earlier. Indeed, even before the publication of Moreno's "Who shall survive" (1934), Nemstetter & Feldstein (1930) had reported some observations regarding the camp counsellor's ability to predict the acceptability of a child to his peers. They found an average correlation of .75 between the ratings of the counsellor and that of the children.

In 1931, Mareno made an inquiry into the ability of teachers to estimate their pupils' sociometric choices and rejections in a fifth grade. The result seemed too discouraging to justify any repetition. "The estimates of the teachers as to who were their most desired and least desired pupils from the view point of the children

were surprisingly inaccurate." (Mareno et al, 1943). Again in 1934 Mareno touched upon this problem. He administered a sociometric test asking for those whom they preferred "to have in their classroom" and "sit next to" to all the pupils of all classes from kindergarten through eighth grade. Then he asked each teacher to write the names of the boy and the girl in her classroom whom she would judge would receive most of the choices from their classmates and the two who would receive next most; also the names of the boy and the girl whom she would judge would receive the least choices and the two who would receive next least. This time the teachers' performance was more encouraging: "In 48% of the instances the teachers' judgements coincided with the findings through the sociometric test in respect to the two most chosen boys and girls; in 38% of the instances in respect to the two least chosen boys and girls in her classroom" (Mareno, 1934).

It took another nine years before a more detailed and more systematic study of this type occurred. This was Banney's (1943) study of teachers' perceptions of interpersonal feelings among their pupils. She concluded:

"Thus approximately 90% of the children were placed by the teachers, either in the same quartile or only one removed from that which they were placed by pupil choices". (Banney, 1943, 419).

In 1942 Moreno published a paper entitled "Sociometry in Action" in which he described a short cut sociometric test he had tried recently. He called it "sociometric self rating" and described it as follows: " . . . It is based on the fact that every individual "intuitively" has some intimation of the position he holds in the group . . . an individual tries to rate his own relations to the members of his group, and their relationship to him . . . Self-rating is obviously like a sociometric test carried out in the mind of the tester himself, in which the other individuals are like dolls. . . . The validity and reliability of data from sociometric self-rating can be determined by giving to a group of individuals an open sociometric test immediately after they have rated themselves . . . " (Moreno, 1942, 301-302).

Surprisingly enough this new technique was not used by Moreno or his followers. In 1949, Maucorps published a sociometric study in the French army in which he had

asked the subjects whether they felt reciprocated by those whom they had chosen. This was the first attempt to investigate the group members' awareness of their sociometric status. His conclusion was: ". . . The more individuals are associated the more they tend to judge adequately the mutualities they exchange with others, but that they do not develop a better idea of their own sociometric status than the isolated individuals." (Maucorps, 1949, p.62.)

In 1951, Renata Tagiuri devoted his doctoral dissertation to this field, calling it "Relational Analysis". (Tagiuri, 1952). He gave his subjects a sociometric test, which besides asking for their choices and rejections on certain criteria, required them to guess those who would choose or reject them. The analysis of the data was based on the number and nature of dyadic relationships obtaining between each pair of group members. He distinguished between the two types of determinants of a subject's perception of his sociometric status. These he called external determinants, i.e. actual positive or negative responses received, and internal determinants, i.e. factors within the subject that contribute to the nature of his perceptual hypotheses.

He found that "Individuals have a realistic conception of who chooses them and who rejects them", at the same time realising that "other things being equal, the subjects' perception (guess) of others' positive or negative feelings toward him would be related to the subject's own feelings toward others"..(Tagiuri, 1952, 98).

Tagiuri's work marked the beginning of a new era in the study of the perception of interpersonal attraction and repulsion. Those who, earlier, had shown no interest in the subject and had taken no heed of Moreno's and others' hints in this direction now accepted Tagiuri's approach and a stream of experimental work started. This was, no doubt, due to the psychologists' lowered threshold of sensitivity to the importance of perception in human behaviour - both social and individual.

Ausubel, Schiff & Gasser (1952), re-christened the field as "sociempathy" and carried out a study of its developmental trends from childhood to adolescence. To them, sociempathy meant "a form of social perception which refers to an individual's awareness of his own and others' sociometric status in a given group of which he is a member" (p.111.) Implicit in this definition is a concept of sociempathy as an ability - reminiscent of Dymond's

(1949) "empathic ability". They asked children of several grade levels to rate all of their classmates in terms of acceptability as friends and to predict how each of their classmates would rate them and be rated by the group on the same criterion. They found high positive correlations at all grade levels between measures of actual and predicted sociometric status. From inspection of the probable errors of these correlational scores it became evident that they represented an ability to perceive own and others' sociometric status which was significantly greater than chance far beyond the .01 level. The growth curves obtained for sociempathic ability showed some indication of a trend toward increased ability with age, but this was not definitive since the various age groups were not matched for sex or socio-economic status.

With this notion of "sociempathy" as a cognitive ability, the problem of accuracy of perception occupied the central position in later studies and much effort was spent in searching for personality correlates and behavioural implications of this ability. Tagiuri, Bruner and Blake's (1953) analysis of the accuracy scores obtained by tests

of "sociempathy" showed that they contained at least three components, those of congruency, mutuality and accuracy per se. By congruency they meant a general tendency among their subjects to give their choices and guesses to the same people. In other words, most subjects tended to guess those members as choosing or rejecting them whom they had chosen or rejected. This tendency combined by the general tendency of sociometric choices or rejections to be mutual, accounted for the larger part of the subjects' accuracy scores. At about the same time, Ausubel (1953) found high and moderate degrees of generality over persons in predicting own and others' sociometric status. One hundred juniors and seniors in a University high school were asked to rate their classmates on a five point scale in terms of personal acceptability as friends, and to predict how each of their classmates would rate them and be rated in turn by the group on the same basis. Four scores were assembled for each subject: the mean acceptance rating he gave to his classmates; his mean prediction of the acceptance ratings given him by his classmates; his mean prediction of his

classmates' sociometric status, and his own sociometric status. It was found that predictions of own and others' status enjoyed moderate and high degrees of generality over persons respectively, as indicated by the reliability coefficients of .53 and .98. However generality over these two perceptual functions (i.e. awareness of own and others' status) was completely lacking. Thus, individuals tended to perceive themselves and others as consistently enjoying a characteristic degree of acceptance from the group; but this perceptual self-consistency was not upheld when the object of perception was shifted from the sociometric status of self to the sociometric status of others or vice versa. There was a marked tendency, reliably greater on the part of girls than boys, for subjects to assume reciprocity of acceptance between themselves and others. This tendency was interpreted by Ausubel as indicative of both subjective distortion of perception (projection) and of realistic awareness of the actual operation of affective reciprocity between pairs of individuals. (Ausubel, 1953, 347.) Schiff (1954) differentiated four judgmental response sets in predicting one's own and others' sociometric position, these are a tendency to over or underestimate

one's own status; a tendency to over or underestimate others' status; a tendency to perceive oneself as a highly acceptable or unacceptable person, and a tendency to perceive oneself as a highly accepting or unaccepting person. Schiff concludes that these four perceptual response sets are sufficiently stable and general over individuals and over judgemental tasks, and presents some experimental data relating them to such personality dimensions as level of aspiration, general adjustment, anxiety as well as sociometric status. It deserves mentioning that the method used by Schiff (1954), Ausubel (1953) and Ausubel, Schiff & Gasser (1952) has not been an ordinary sociometric test but a rating scale asking the subject to rate himself and others as well as to predict the ratings of others on the criterion of acceptability as friends. Thus it is difficult to partial out the effect of ordinary judgmental sets inherent in any and every act of judging others. Thus, Ausubel, Schiff and Gasser (1952) report a disproportionate tendency among children of all ages to use the upper portion of the rating and prediction scales. Interestingly enough, they found an insignificant correlation between the socio-

metric status of subjects as determined by their rating scale and that defined by a conventional sociometric test.

Gronlund (1956a) has presented some evidence suggesting generality of sociometric perception as demonstrated by teachers' ability to predict accurately their pupils' choices on three criteria of seating companion, play companion and work companion in forty sixth-grade classes. Generality in this connection is defined as the extent of agreement between a teacher's accuracy on one criterion with his degree of accuracy on each of the other two criteria. The correlations obtained ranged from .32 to .52 for boys and from .59 to .67 for girls, all being significant at, or beyond .05 level. The results were interpreted as supporting the hypothesis of generality. The same author (Gronlund 1956b) carried out another investigation correlating the accuracy of elementary student teachers' judgements of the sociometric status of their classmates with the accuracy of their judgements of the sociometric status of their pupils. The correlation coefficient obtained, 0.49, was significant beyond the one per cent level, indicating the presence of a general ability to judge the sociometric status

of others. This last finding seems to run counter to that found by Ausubel, Schiff, and Gasser (1952) and Ausubel (1953). This may be due to the different techniques employed.

The problem of the reliability of these measures of sociometric perception is fraught with all the difficulties - both practical and conceptual - besetting the question of reliability in ordinary sociometric tests. In view of the stress put on the subjective nature of the measures, test-retest reliability seems to be out of the question. Several investigators have reported high reliability scores in terms of the internal consistency of the test (e.g., Ausubel, 1955; Schiff, 1954; etc.) Others have reported high reliability in terms of inter-criteria correlation coefficients (e.g. Gronlund, 1956a, 1956b). None of these two methods of depicting reliability is very satisfactory, and both are subject to criticisms levelled against the use of these methods in sociometric tests (cf. Lindzey & Bergatta, 1954).

The same difficulties are encountered in determining the validity of these measures. Most studies have attempted to validate their findings in terms of their

correlations with some independent variable. These independent criteria of validity have ranged from various measures of personality such as age, sex, level of aspiration, general adjustment and anxiety, to effectiveness in group as revealed by one's sociometric status and leadership position in the group, and such intra-group phenomena as racial prejudice and religious cleavage. These results will be discussed in later chapters, where it will be seen that the interpretation of these findings is far from simple.

CHAPTER II :

A CRITICAL AND CONCEPTUAL ANALYSIS

The foregoing chapter has summarized the historical development and present status of the field of Social Perception. It has also indicated some of the conceptual and methodological problems besetting this area of investigation and has highlighted the main trends of enquiry in the past fifteen years. The picture as presented there leaves much to be desired, both in terms of theoretical approaches and experimental findings. Part of the confusion and lack of systematic organization in our own presentation is also due to the ill-defined and confused state of the field of study.

Our presentation is also seriously incomplete in that it gives no account of the contemporary psychoanalytical approaches to empathy. True, we have given a detailed account of the views of Freud, Jung, Adler and Sullivan in connection with the historical development of the concept of empathy. Since their time, however, psychoanalysts of different schools have given much thought to the problem of 'empathic understanding' and the concept has been fully incorporated into the theoretical edifice of psychoanalysis.

Greenson's (1959, P. 1412) summary statement on the matter

is a good example of what the orthodox psychoanalysis has to contribute to the theory of empathy. He writes :

"The most important single method for determining the patient's capacity to deal with the given situation is derived from the analyst's capacity for empathy. Empathy refers to the capacity of a human being to share in the feelings of another person, to experience, in effect, his feelings. One shares in this experience in quality but not in degree, in kind but not in quantity. It is a procedure which one permits oneself to engage in temporarily and for the purpose of understanding. Empathy cannot be taught or learned. It is a capacity which everyone has had but has often lost as th result of anxieties, insecurities, and inhibitions. Sometimes one can be treated and have thesè inhibitions and anxieties removed, and then one can develop the capacity to empathize again."

In interpreting this quotation, it must be borne in mind that present-day psychoanalysts' are as varied in their definitions of empathy as any other group of psychologists. A comparison of Greenson's description with those of, say, Stewart (1954; 1956), Schafer (1959) or Maddaloni (1961) will bear out this conclusion.

The lack of consensus, however, is not limited to the psychoanalysts only. As the quotation from Tajfel (1962) in the previous chapter suggested, despite all the efforts made during

the past 15 years there is still little agreement among the social psychologists either. As eminent a social psychologist as Gardner Murphy (1959), for instance, has mentioned no more than Sherif's classical experiments on autokinetic movement as examples of social perception. On the side of empathy, a recent textbook on communication (Berlo, 1960), while giving an otherwise excellent account of interpersonal communication, tries to explain such a communication on an inference theory of empathy explicitly derived from Asch's (1952) critical account of understanding through inference supplemented by Mead's role-taking theory. In point of fact Asch does not mention empathy except in a very short footnote branding it as another version of inference theory and subject to all the criticisms levelled against it.

Notwithstanding such divergence of opinion as to the real nature or definition of the ability or abilities involved, however, psychologists from various walks of professional life have emphasized the importance of social perception or empathy. Even among tough-minded Neo-behaviourists, Hebb's (1960) manifesto for a second revolution in American psychology implicitly includes empathy, along with the self concept, among the higher-order mental processes that must be brought back to the area of behaviouristic psychology.

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Spiegel's (1959) chapter on "Psychiatric Communication" is a good example. Parker (1955) and Schultz (1954) have discussed the importance of empathy for management. Gompertz (1960) has given a detailed account of the empathic ability and its implications for journalism. Others have claimed international significance for social perception in bringing about better international understanding and promoting the cause of peace and coexistence (Blum, 1956).

As to the differences, in usage or meaning, between the two terms "empathy" and "social perception" the literature, to the extent we have been able to trace, is silent. Analytically inclined psychologists and psychoanalysts seem to favour the term "empathy", whereas experimentally inclined writers prefer the term "social perception". Very often, however, the two terms are used interchangeably. And the majority of studies would seem to agree on the following differentiation of the field.

On the one hand, there is supposed to be a particular class of events, uniquely human and social in nature, which require a particular cognitive process for their understanding, i. e., the process of Social Perception. The mental capacity underlying this process is some more or less mysterious faculty called Empathy. In the same way as a faculty of intellect is prerequisite for any cognitive activity or achievement, a similar faculty of empathy is pre-requisite for understanding human behaviour, particularly those aspects of human behaviour which constitute

the human mind. Indeed, the recurrent controversy over clinical versus actuarial inference and prediction is no more than a reflection of such^a dichotomous view of cognitive processes (Meehl, 1954).

The psychoanalytically-oriented advocates of this view, who, as attested by the quotation above, are explicit about the innate nature of empathy, have little more to say as to its detailed structure, locus or modus operandi. They, like Sullivan, would rather leave these problems for posterity to solve. Some of them appear to use empathy in a moral sense similar to that conveyed by Scheler's concept of sympathy. Thus Stewart (1954) has contended that "Empathy is grounded in good will and is the common ground of ethics and of personality theory." Such a confusion adds little to the explanation of empathy.

On the other hand, those experimentally-inclined psychologists who have developed the modern experimental approach to empathy adhere to an operational notion of empathy as an ability or process of understanding others' subjective responses. The operational measure of this understanding is the degree of accuracy in predicting others' responses in a given situation. The index of accuracy is determined by comparing the predictions against the criterion responses of others concerned. The procedure is well in accord with the logic of scientific enquiry which requires that the ultimate validity of any hypothesis be judged by the accuracy of predictions derived from it. It is on

on this ground that Notcutt (1953, p. 215) has proposed to use the operational measure of empathy -or specific prediction as he has called it - as a criterion of validity for other means of personality assessment.

The mechanism underlying this kind of understanding, according to this second group of investigators, is a sort of imaginary projection of one's self into the other's situation which enables one to view the situation from the vantage point of the other. How this projection is achieved is not made clear. One thing, however, is clear : the achievement is not through the known mechanisms of inference but depends on some form of intuition. The idea of empathy as a more or less general mental capacity is widely held and many attempts have been made to find its intellectual and personality correlates (Dymond, 1950) as well as its effects on such aspects of group life as leadership (e. g., Gage, 1953 ; Mann, 1959).

In the remaining part of this chapter an attempt will be made to analyze¹ the process of empathy -as currently defined - and, if possible, to point out its links with the ordinary processes of cognitive achievement. Before entering the main analysis, however, some agreement must be reached as to the proper limits of the concept of empathy and its usage.

To reduce all kinds of human understanding of other human beings to the miraculous functioning of a general empathic ability is to go far beyond the legitimate boundaries of the

scientific principle of parsimony. Not all aspects of human behaviour are equally "human" - or, for that matter, equally "social" - in nature to require the intervention of social perception or empathy for their comprehension. No "empathic ability," for example, is required to enable us in sizing up, say, the height of a stranger .

Even in the case of such human and social phenomena as the expressions of emotional states an empathic theory can do little that the ordinary stimulus - response theories of inference (e.g., Allport, 1924) or the Gestalt doctrine of direct apprehension (e.g., Asch, 1952) cannot do more parsimoniously. After all, many of these emotional expressions are shared by other animals as well as man. To say that the understanding of such emotional responses as fear or anger in a dog depends on a form of empathic projection of one's self into the personality of the experiencing animal does little in the way of explaining the mental processes involved. In the same way, in Heider and Simmel's (1944) experiment, cited in the previous chapter, to claim that we put ourselves in the shoes of the small triangle and hence see the large one as aggressive, mean and bullying, makes little contribution to the explanation of the phenomenon. Nor does Lipps' original notion of empathy as a process of kinesthetic inference solve the problem.

In a similar manner, ordinary judgements of personality traits require little empathic ability in the currently used

operational sense of the term. To judge whether A is two points above or below average on a given trait, or whether he occupies the first or the Nth position in his group in terms of an ability X, does not need any empathic process of transposing oneself into the position or situation of A. What is needed, instead, is that the judge should have a clear view of what the trait or the ability in question means, that is its behavioural implications, and should have had reasonably sufficient opportunity to observe his object of rating. The degree of accuracy or judging skill will, no doubt, depend on the judge's capacity to exploit his evidence and make inferences.

What remains of the domain of empathy, then, is the capacity to predict such subjective aspects of others' behaviour that constitute their attitudes. What is meant by attitudes? Allport's (1935) classical definition of an attitude as "a mental and neural state of readiness exerting a directive influence upon the individual's response to all objects and situations with which it is related" (P. 810) does aptly convey our notion of an attitude. Defined in this way, an attitude is an intervening variable and, like any other intervening variable, has to be inferred from its antecedent stimuli and consequent responses. Still operationally more appropriate for our purpose is Fuson's (1942) definition of an attitude as "the probability of occurrence of a defined behavior in a defined situation".

Indeed, the customary test of empathy requires no more than

the prediction of a defined behaviour in a defined situation.

On the face of it, such an ability to predict others' attitudes may not seem of much consequence. Yet, in point of fact, the process of social interaction and communication consists, to a very considerable extent, of such predictive activity. From dawn to dusk, every instance of interpersonal behaviour involves a series of predictions of, and anticipatory reactions to, the potential reactions of others. We are always on the look out to see what others in our life-space think, say or do about us or about things which have some "proprieate" -in the sense defined by Allport (1960)- significance for us. Our own responses to others, in return, are more influenced by our own expectations and anticipations than others' actual behaviour.

"All human communication involves predictions by the source and receiver about how other people will respond to a message. ... Every communicator carries around with him an image of his receiver. He takes his receiver (as he pictures him to be) into account when he produces a message. He anticipates the possible responses of his receiver and tries to predict them ahead of time. These images affect his own message behaviour." (Berlo, 1960, 116-117)

On a higher level, as Allport (1954b) has pointed out, the whole process of thinking is a constant endeavour to anticipate reality. By thinking we try to foresee consequences and plan actions that will avoid whatever threatens us .

This aspect of thinking is even more important for social and interpersonal situations. Such situations differ from ordinary physical situations in that they transcend the usually static and stable relationships obtaining among the non-human aspects of the environment. The menaces arising from the physical environment are direct and unintentional; we can avoid them more or less simply by standing aside from their course. Human menaces, on the contrary, are usually intentional, directed and capable of pursuing many uncanny detours. And despite all the efforts made during the process of socialization the possibility of such menaces is far from being exhausted. Hence the need to be on a constant guard against the potential attitudes of others, and hence the necessity of a predictive ability to anticipate such attitudes.

As suggested above, attitudes are intervening variables to be inferred from their antecedent stimuli and consequent responses. More often than not, however, the consequent responses are the only source of inference. We usually do not know enough about the antecedent stimuli to base our inferences upon them, or the responses simply alleviate any need for the stimuli as such. Hence we can use the term 'response' instead of the term 'attitude' and say that social perception or empathy is the process or capacity underlying man's ability to predict -or to expect and anticipate- the responses of other people in a given situation.

Some of the terms used in this statement need to be explained before we proceed any further. Our use of the terms 'ability' and

'process' as alternatives reflects our recognition of recent developments in the field of human capacities where even the most basic and well-established of all human abilities, intelligence, has come to be regarded as a series of central processes and strategies for the processing of information rather than an innate and predetermined capacity (Hunt, 1961). It is only regrettable that such unfounded implications of the term 'ability' as traditionally understood in connection with intelligence have already plagued the notion of empathy or social perception. A recent text-book on empathy (Katz, 1963) has in fact called it a "nonverbal and nonlogical skill" which "suggests a somewhat odd and elusive skill, a divinatory art, a sixth sense, an instinctive and primitive form of penetrating to the core of another person".(P.1)

We have used the terms anticipation or expectation as synonyms of 'prediction' to dispell any misunderstanding that may arise from the etymological derivation of the verb 'to predict'. Prediction usually implies one kind of anticipatory response only, i.e., verbal prediction. One can anticipate or expect many events or attitudes, however, without ever giving verbal expression to his predictions.

Responses, on the other hand, can take any form or shade from gross muscular activity through all kinds of verbal utterances to extremely delicate patterns of facial or postural expression. An attitude of hate, for example, can be expressed through such different forms of response as bodily assault, verbal abuse or an imperceptibly fine change in the ordinary position of one's eyebrows.

Now, such anticipatory functioning as is involved in social perception seems to be part and parcel of our cognitive system. Whatever its shortcomings, the New-Look psychology has taught us that our cognitive life, far from being a loyal and passive registration of events happening in the objective world, consists of a continuous series of anticipatory reactions to a selected range of physical stimuli impinging upon our sense-organs with a view to convert^{ing} them into categories of simple, orderly, manageable and coherent representations of the outside world (Bruner, 1957b). These categories are in turn utilized to jump further ahead of the given sense-data and to build up fresh hypotheses and expectations going far beyond the evidence at hand (Bruner, 1957a).

The biological reason for the development of such a predictive capacity is not difficult to postulate. As Hebb(1955) has argued, man's higher mental development is accompanied by a much higher sensitivity to anxiety evoking stimuli and a comparably high vulnerability to strong emotional reactions. This implies that he must be on a sort of constant look-out for such anxiety - evoking stimuli and get cognitively ready to tackle them. Living in a world of "booming buzzing confusion" -to borrow William James' phrase- man simply cannot afford to follow the wild wishes of the external stimuli, but rather he has to develop a "Cognitive Map" of his own, a tentative map which will indicate routes, paths and environmental relations, which will determine what responses, if any, he will finally release (Tolman, 1948).

And, according to Hilgard (1951), the prime function of learning is to help build such cognitive maps or sets of expectations and anticipations. Hilgard has tried to explain this property of human perception by considering the perceptual system as a statistical machine capable of quickly estimating probabilities. Each of the cues present now is related to many past experiences. These past experiences provide a kind of table of probabilities according to which estimates are made. Such a probabilistic view of human perception has been lent further support by later developments in electronic computer techniques (c.f. Rosenblatt, 1958).

Whatever the true structure of our perceptual apparatus, it appears to be designed in such a way that it cannot take an impartial view of the incoming signals postponing judgement pending upon their clarification. Rather, our brain seems to have a strong built-in tendency to jump ahead, to take a short cut, to take action upon a few indications and to develop anticipations as to the future course or meaning of the incoming signal. In Hilgard's (1951, p. 109) words: "We not only respond to the stimuli that confront us, but respond in preparatory ways to expected stimuli. Such preparatory or anticipatory response is an achievement of learning and intelligence in which perception shares".

Over forty years ago, Spearman (1923) proposed three qualitative principles for 'knowing', namely, the principles of

experience, relations, and correlates. The first two principles mean no more than that we are able to get information through our senses, and that the data given through senses tend to be related to each other. The third principle, the "eduction of correlates", summarizes the creative capacity of human mind and underlies much of what we have said so far. The principle states that when any item and a relation to it are present to the mind, then mind can generate in itself another item so related. (Spearman, 1930, p. 23). The three principles together Spearman called "noegenesis" and went on to claim that

" ... These same three processes have the further virtue, formerly ascribed to some ill-defined power called 'intelligence', of attaining belief on adequate grounds. ... Such knowledge upon adequate ground is sometimes characterized as 'insight' or 'intuition'." (Spearman, 1930, Pp. 34 - 35).

This definition of insight as knowledge upon adequate ground can be very usefully extended to the process of empathy or social perception. In point of fact many writers have used the terms empathy, insight and intuition interchangeably. More interestingly some of the experimental evidence cited by Spearman (1930) in support of his noegenetic process of creativity bear striking resemblance to the present-day experimental approaches to empathy . In one study, for example, children were provided with an account of the siege of Babylon by Cyrus the Persian.

They were told of the impregnable walls and well-guarded gates of the city and the river that ran through it. They were then asked to put themselves in Cyrus' position and think how to capture the city without having to attack its well-protected defenders. The expected true response, of course, is that the river should be diverted and its dry bed used as a safe entrance to the city. Indeed, the situation used in this experiment is much more concrete and realistic than those used in current studies of empathy.

In passing, it must be recognized that Spearman's principle of the 'eduction of correlates' has been incorporated into many modern theories of cognition, from Vernon's (1954) theory of schematic perception to Bruner's (1957a) notion of 'coding systems' and (Bruner, 1957b) 'perceptual readiness', to Bartlett's (1958) view of thinking as a process of 'filling up the gaps'. The concepts of 'evocative' and 'predictive' relations (and integrations) in Osgood's (1957) behaviouristic analysis of perception and language also bear a close resemblance to Spearman's views.

On the basis of foregoing discussion, then, empathy or social perception would appear to be a capacity or process of perceiving, understanding or predicting the attitudes -i, e. potential response tendencies- of other human beings. This is very similar to Oldfield's (1943, P. 14) view of social judgement in an interview situation, which states that :

"It is chiefly the attitudes displayed by the candidate that form the basis of the interviewers' judgement. It is the interviewer's task, by skilful conversation, to cause a number of attitudes to be displayed by the candidate."

The mental process behind this predictive ability is the peculiar propensity of human mind to "educe correlates", to go beyond the given evidence, to fill up the gaps. Thus empathy or social perception turns out to be more a kind of inferential reasoning than perception as such. Before we run into another controversy over perception vs. thinking issue we must listen to Bartlett's (1951) argument to realize how tenuous the difference between the two processes is :

"... Whenever anybody interprets evidence from any source, and his interpretation contains characteristics that cannot be referred wholly to direct sensory observation or perception, this person thinks. The bother is that nobody has ever been able to find any case of the human use of evidence which does not include characters that run beyond what is directly observed by the senses. So, according to this, people think whenever they do anything at all with evidence." (P. 1)

Such characteristics of thinking are inherent in almost all experimental designs used for the study of social perception. In most of these studies in fact sensory cues are reduced to a minimum. and the subject is deliberately forced to rely on extrapolations from indirect and unknown sources of evidence.

Turning to the characterization "knowledge upon adequate ground", what kind of knowledge can be regarded as such? Taking Spearman's own advice, obviously, it is a knowledge based upon relevant evidence generated according to his basic principles of cognition. In most of the current studies of social perception two main kinds of such evidence are available. The first of these is provided by the other or the category of others whose attitudes are to be predicted. The second class of evidence is provided by the situation facing the other which embraces the object or referent of the predicted response and more or less defines the form and range of the response. The main task of the predictor is to put these two classes of evidence together, to observe their relations, and to derive new conclusions or correlates.

Basically the first class of evidence is of greater importance and of more say in determining the outcome of prediction. If we happen to have had plenty of opportunity to observe the behaviour of an individual under various conditions, then, we can easily rely upon this information in predicting his possible reactions under similar situations. Here, as Cronbach and Gage (1955) have argued, tests of empathy measure no more than our knowledge. As the degree of acquaintance with the other decreases, external and situational clues, i.e. evidence of the second type, gain in importance and tend to guide our inferences and predictions. By External clues we mean such clues as are not peculiar to the other qua an individual but arise from his membership in larger classes, categories or universes, such as age, sex, culture,

nationality and ethnic memberships or social role and status relationships.

Some workers in the field of empathy seem to think that by reducing the amount of acquaintance between the predictor and the predictee they can deliver the empathic ability from the charge of being inferential. Hence the tendency to use complete strangers — sometimes seen only through filmed interviews — as objects of prediction. These workers, however, have overlooked the fact that by reducing the possibility of inference from the past observation of the behaviour of the 'other' they have just managed to increase the relative amount of extrapolation from the external clues inherent in the situation.

Obviously, situations vary a great deal as to the clarity and potency of their demands. Sometimes the stimulus configuration making up a situation is of such a forceful and clearly defined character that it imposes a more or less universal reaction on the organism facing it, irrespective of its identity or its class memberships. In such a situation, any information about the predictee is redundant. Thus, it requires no knowledge about the 'other' beyond the fact that he is a normal pain-conscious person to predict that he will withdraw his hand from an approaching flame.

It begs no question that these demand characteristics of situations, like the equivalent response characteristics of the others concerned, are products of past experience and learning. We attribute a particular character to a situation only after having

seen them occur together a sufficiently large number of times. In the course of these observations we acquire a more or less precise estimate of the probability of a situation being followed by a certain class of response sequences. Similarly, in the case of the predictees, we learn to associate a person, or a category of persons, with the probability of one kind of response rather than another. Social learning, in other words, is largely probabilistic.

As Brunswik (1939) has suggested, the classic experimental procedure of rewarding responses to one stimulus all of the time while never rewarding responses to another stimulus is unrealistic and does not apply to everyday learning situations. In everyday life situations a specific response to a specific stimulus class has a probability generally less than 1.00 of being rewarded or correct. This formulation emphasizes the weighting of response decisions in terms of previously learned probabilities. In other words, in responding to a stimulus-category we choose those response-categories that are more likely to be rewarded or accurate. Such a probabilistic learning has been found to obtain in the animal level. Indeed, Brunswik himself (1939) has shown that rats can learn to estimate ratios of reward going to that side of a T-maze where it would have the higher probability of being rewarded. With human beings, contrary to Piaget's (1950) earlier finding that children under seven years of age are unable to respond consistently to the quantitative proportions of elements, recent research indicates that, given proper experimental conditions and reinforcements,

children of four years of age do have some understanding of probability and tend to adjust their responses according to the proportion of reward or reinforcement. (Yost, Siegel, & Andrews, 1962).

The implication of this digression into probabilistic learning theory for our discussion is that in learning how to respond to a stimulus situation we also learn the likelihood of good or evil, reward or punishment, approval or reproach attending each mode of response. Such learned probabilities provide the adequate ground of our future expectations and predictions. Sometimes our learned expectations may prove wrong. Even in our extreme example above, the predictee may turn out to be a member of that fire eating species of Persian Dervishes and show no withdrawal response in the face of the approaching flame. Yet, the 'probabilistic table' of our past experiences with ordinary people would tell us that such an example is extremely rare and need not bother our day-to-day predictions.

The flame in the above example represents one extreme of the situational demands. The six-item rating-scale used in Dymond's studies may represent another extreme. Even here there exist a number of external clues, learned expectations, that may enhance the accuracy of prediction. Suppose that we are asked to predict the self-rating of some stranger on a trait, X. From our past experience, we know the relative frequency of this trait in the population as a whole. We also have some idea of the social approval or disapproval associated with this particular trait.

No need to say that this second class of evidence largely determines the first class of evidence. In other words, socially approved traits have much more chances of being demonstrated and observed than the socially disapproved traits. Besides these, we usually have some notion of the prevalent 'response styles' of the population with respect to different categories of traits. We know of the virtues of being modest, unassuming, etc. Putting all these bits and pieces of evidence together we can predict the other's self-rating with a pretty high degree of confidence. All these uncontrolled 'bits and pieces' of evidence, combined together, make up the demand of a situation, and determine the possible range of responses to that situation.

In some cases, such as the example of the flame above, the range of possible reactions is determined by the biological make up of the organism. In many other cases, however, social norms, ethos, role-expectations, mores and/or legislations define the range of possible response to various stimulus situations. Of course responses include both overt and covert behaviour, both attitudes as response potentials and their verbal and physical expressions. The second type of determination is particularly true of social responses.

Unity and conformity being one of the prime aims of socialization in almost all human societies, a great deal of education - formal or informal - consists of inculcating socially desirable patterns of behaviour in the individual. The whole process of socialization in fact is no more than a process of building up

proper attitudes or response tendencies towards some significant situations, that is objects, persons or ideas, inherent in the social life of the community. Learning of attitudes like any other kinds of learning depends on a large number of reinforcements on the part of the agents of socialization. The reinforcement is largely in the form of approval or encouragement. Once learned, such socially approved responses become part of a person's self-system and acquire secondary reinforcing power. As the machinery of socialization applies, more or less equally, to all members of a society such socially approved response tendencies or attitudes become of a very high probability of occurrence and easily predictable. Such commonly held attitudes, indeed, form what sociologists have called the "Common Core of Culture". As Rose (1956, P. 34) has put it :

"There is a core of our culture which practically all people in it do know and understand. This core includes knowledge about behaviour toward other people and about behaviour toward certain commonly used objects. ... So there is a core of common understandings in our culture, and on the basis of these understandings we have correct expectations most of the time regarding the behaviour of others. ... The limits of a culture have to be described in terms of the extent of common understandings regarding how people can be expected to behave toward one another."

The attachment of verbal tags -names- to these attitudes and

their referents greatly facilitates their acquisition and further enhances the possibility of deriving the probability or relative frequency of a response's being correct, that is rewarded, or not. In fact, Osgood's studies of what he has called "Semantic Differential" have shown that each unit of verbal symbolism possesses a 'connotative' meaning besides its ordinary 'denotative' meaning, and that the largest part of this connotative meaning is accounted for by: an "evaluative factor" of good or bad. (Osgood, Suci, and Tannenbaum, 1957). Good and bad being largely a matter of social convention, it is highly probable that this evaluative factor should reflect the social reward value of each verbal concept.

In the traditional studies of social perception, situations are usually represented by verbal statements. Such verbal situations include one more external clue, that is the social desirability value of the statement used. As Edwards (1957) has suggested, social desirability summarizes the relative prevalence or cultural value of a characteristic or response in a given society. Edwards has claimed that knowing the position of a statement on the social desirability dimension, one can predict, with a high degree of accuracy, the proportion of individuals who will subscribe to it in self-description. The significantly high correlations obtained between the social desirability scale values of various personality test items and their probability of endorsement in a large number of studies seem to bear out this contention.

In summary, then, social perception or empathy, as operationally defined and gauged, consists of predicting the behaviour of certain category of others in a given situation. This category of others may vary from an individual other, with specific relationships to the predictor, to a collectivity of others known only through social norms and stereotypes.

Such a predictive activity is of great importance for the process of social interaction and communication. The capacity to engage in such a predictive activity can be regarded as another aspect of Spearman's concept of 'naegenesis' or obtaining knowledge upon adequate grounds, so characteristic of human cognitive system. In ordinary studies of social perception two main classes of such 'adequate grounds' for inference are provided. These are, evidence as to the other whose responses are to be predicted, and evidence arising out of the context of prediction or the demands of the situation. The relative part played by each of these two classes of evidence is largely a function of the requirements of the task and the presence or absence of the evidence of first type. Both types of evidence are products of past learning and experience .

where

In ordinary tests of empathy, situations are represented by verbal propositions or descriptions, part of the contextual evidence is provided by the evaluative character of the statements used, or, in the case of personality characterizations or trait names, by their social desirability. This means that predictions of others self-assessment on a socially desirable variable is much easier to make.

Similarly, as the socially desirable attitudes are those attitudes that enjoy social approval and prevalence, such attitudes must be much easier to predict than attitudes dissonant with the norms and expectations of the society.

On the basis of this analysis, as the outcome of prediction, its accuracy or inaccuracy, depends on a series of inferences based upon different classes of evidence, varying in their relative strength from one predictee to the other and from one situation to the next, little generality or consistencey can be expected. There are of course certain inferential strategies that can be employed in more than one situation and thus result in some degree of generality. But the process is so/contaminated by response sets inherent in the particular medium of prediction used that it is extremely difficult to distinguish between the real source of generality and the artifactual one. The high degree of generality found in studies using rating-scales as media of prediction is an example of this complication.

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CHAPTER III

THE PRESENT STUDY

The present study consists of two more or less independent parts. The first part is concerned with a study of children's ability to predict the affective and evaluative responses of their classmates towards themselves. These responses are gauged through a sociometric test and a Guess Who test. Along with these data were collected concerning the personality dimensions of Extraversion and Neuroticism and such group variables as leadership and popularity. A fuller description of these tests and the rationale for their inclusion in this study will be given in the following pages.

The second part is an attempt to investigate the ability of a sample of more mature training college students to predict the responses of certain others to certain situations as presented by a batch of tests bearing on social attitudes, personal values, and private[/]mental states or feelings. The aim is to find out whether people, as represented by this particular sample, show any ability to predict the responses of others and, if so, whether this ability shows any degree of consistency from one situation to another and over different kinds of others involved. A fuller discussion of the rationale for and tests used in this part of the study will be presented in the second half of this chapter.

The main aim of the study as a whole is to re-examine some of the findings of the previous workers in the field of social perception in the light of the conceptual scheme presented in the last chapter. The most important among these findings are the nature of the ability under study, its specificity or generality, and the personality, intellectual and group variables associated with it. As will be remembered from the previous chapter, our conceptual analysis cast some serious doubts as to the genuineness of the positive findings reported in this connection.

FIRST STUDY :

As stated above, this study is concerned with the ability of a group of children to predict the affective and evaluative responses of their classmates towards them. It covers the area of social perception known as "sociempathy" or sociometric perception. Here, in the first place, we shall be concerned with the nature of the predictive achievement as such, that is , with its deviation from chance expectancy, its variation according to the object of prediction, etc. Having established this ability, we shall investigate some of the personality factors accompanying it and look into the possible relationships between this ability and such group variables as leadership, popularity, and sociometric choice status. In this section, our work will be oriented by the findings of previous workers on the characteristics of good judges of people (Taft, 1955) on the one hand and the findings of the investigations of personality factors in small group performance - so admirably summarized by Richard

Mann (1959) - on the other hand. In the second place we shall inquire into the subjective facet of the choice process and indicate the close relationship between choosing others and predicting or guessing their choices and we shall point out some of the difficulties besetting the concept of sociometric perception or sociempathy as an ability.

In this chapter we shall give a detailed account of our experimental design, our tests and our subjects of study. At the same time we shall try to explain our rationale in using each test as well as our general guiding lines.

SOCIAL PERCEPTION AND HOW IT WAS MEASURED

In the previous chapter we showed that one of the several kinds of social perception was the perception of one's status in a group. As defined by a sociometric test, status is the number of choices received by an individual on a specific criterion. ⁽¹⁾ To obtain social

(1) More refined and complicated measures of sociometric status have been put forward by Proctor & Loomis (1951) and Katz (1953).

perception, the individual is simply asked to guess or predict those who would choose him on the given criterion. The accuracy of social perception is determined by comparing the guesses made by the individual against the choices he has actually received. This is the procedure used in our study.

Obviously, the use of "perception" in this context is subject to all the criticisms levelled against the concept of social perception. Asked to guess those members of his group who are likely to have chosen him as a companion for a certain purpose, the subject is faced with a decision-making problem which makes as much demand on his grasp of the present situation as on his past experiences and observations. The final decision rests upon a process of inference, of putting bits and pieces together and reconstructing them in the light of one's subjective picture of what is demanded by the task in question and what one is willing and able to contribute to its accomplishment. All these are heavily dependent on memory, knowledge and the ability to infer new possibilities from old realities - not to mention one's projections, wishes and self-enhancing fantasies. To use

"perception" to cover all these none-too-similar factors is to expand its meaning beyond the boundary of its technical usage. Ausubel's "sociempathy", ~~coined~~ to combine sociometry and empathy, suffers both from lack of public acceptance, and from all the weaknesses (ii) inherent in the concept of empathy as such. Moreover, its adoption seems to be based on a conviction that the demonstrated ability of group members to predict their positions in the group is an independent mental "capacity" in its own right and apart from the hypothetical "empathic ability" in general. This view, we find hard to subscribe to before presenting our own data. Notwithstanding these criticisms, we shall use the term social perception in this study, partly for want of a better word and partly to comply with the current practice.

Our first test of social perception consisted of a sociometric questionnaire asking the group members to choose a number of other members on three different

(ii) According to Allport (1961): "The theoretical coin (of empathy, as defined by Dymond) has depreciated, probably beyond redemption." (Allport, 1961, p.537.)

criteria and to guess those members who would choose them on those criteria. These criteria were:

- I. To work with in a group in an English class;
- II. To work with in a group in a Mathematics class; and
- III. To spend one's free time with.

The questions were put to the subjects all in one session and on one paper. In each case, the perceptual or guessing part followed the actual choosing part. Logically, it would seem more reasonable to separate the two parts and administer them in two separate sessions in order to avoid the creation of response sets which might carry the influence of choosing onto the guessing task. This was not done because of the time-limits imposed by the schools where the study was carried out. Besides, we had Tagiuri's (1958) evidence that such measures did little in the way of offsetting the impact of choosing process on guessing process. As was suggested in the previous chapter, there appears to be a very close relationship between the two processes and people tend to guess as choosing themselves those whom they have chosen or they would choose. In view of the repeatedly-found high stability over time of the socio-

metric choice (Manton, Blake & Fruchter, 1955a) the chances are very bleak that such spatial and temporal arrangements of the two processes should have any significant effect on their interaction.

Our first two criteria were regarded as covering the area of work-task situations or the area of sociotelic relationships as some sociometrists prefer to call it (Jennings, 1959). The choice of English and Maths classes was further prompted by the existence of such group work in the first school where the study was carried out. The third criterion - to spend one's free time with - was regarded as representative of what Helen Jennings (1950) has called "psychetelic" relations. This criterion was supplemented by a fourth question asking simply for the subjects' choices of those whom they liked most. The number of choices had been restricted to four in the first study and to five in the second. This restriction of the number of choices and guesses seemed necessary to render the statistical analysis of the test manageable and to permit the application of probability models.

The first three questions satisfied four of the six

conditions laid down by Marenco (1953), that is, they specified the limits of the group within which choice had to be done, they presented a specific criterion of choice, they were put to the subjects in privacy and with the assurance that their responses would be confidential and they were couched in terms understandable by the subjects. The two other conditions however, could not be satisfied: The number of choices had to be restricted and we were not in a position to re-structure the group according to the outcome of the test. After all, these two conditions have not been observed by over 75 per cent of all sociometric inquiries (Hare, 1962). The fourth question - whom do you like most? - falls short of fulfilling the condition of a specific criterion as well. But a number of studies has shown the superiority of such a general question in revealing group structure. Croft & Grygier (1956) gave a sociometric test based on eight different criteria to 400 boys in a London secondary modern school and found that "the best indication of friendship or dislike was a general straightforward question not related to any specific situation (i.e. which boys do you like most, which boys do you like

least?)" (p463) Gronlund (1955) found that social status scores based on a general criterion are more stable than those based on specific ones, possibly because choices on a general criterion are elicited by less modifiable characteristics of the total personality, while choices on a specific criterion depend more on constantly changing situational factors.

The adoption of four choices on each criterion was based on the a priori assumption that this number would provide a reasonably satisfactory range for the individuals' expansiveness at the same time keeping it from becoming unmanageably large. The number was increased to five in the second study. This was in recognition of the finding by Gronlund (1955) that five choices proved to be more stable over time than any other number and could be regarded as of a higher reliability.

The original test had included questions on the negative feelings among the group members as well as the positive choice. The study of this negative aspect of intra-group relationships and its perception seemed more important in view of the relatively little work

done in this direction. Tagiuri (1960) has invited more attention to this area. Unfortunately, the investigation of this negative aspect is more often than not objected to either by the subjects or by the school authorities or both. In this case, the head of the English department came out strongly against these negative items on the ground that they might lead to intra-group tension and open aggression by giving expression to the members' negative feelings. Thus, in the first study, we had to drop the negative items. But in the second school, the authorities did not show any objection and the negative items were restored. In short, our sociometric test consisted of eight questions in the first study and sixteen questions in the second study, asking the subjects to indicate their choices of five classmates whom they liked most (and five whom they liked least) on four particular criteria as well as those who, they thought, would most like (or least like) them on the same four criteria. The test was supplemented by a further question inquiring about four or five best friends of the subjects' in the class. This question was designed to reveal the existing friendship patterns

in each class and serve as a reference point against which variations over criteria could be compared.

Our second measure of social perception was a Guess Who test on which the subjects had to rate their group members in terms of a number of descriptions and to predict the items on which they had been named as well as those who had named them on each item. This test was designed to throw some light on the evaluative aspects of the sociometric choice process and to provide a somewhat different measure of social perception in terms of the ability to perceive or predict one's position in the network of verbal evaluative reactions emanating from the other members of his group. The test will be described in a later section.

LEADERSHIP AND HOW IT WAS MEASURED

The study of leadership has occupied a central place in the social psychology of the last three decades. The mere range of the area is prohibitive of any attempt at a cursory summary or review in this text. Moreover, there are a number of excellent and up-to-date reviews (Jenkins, 1947; Stagdill, 1948; Gibb, 1954; Bass, 1960) which make any new attempt redundant. Therefore, our

discussion will be restricted to an account of the technique used for measuring leadership in this study and to the presentation of some data bearing on the reliability and validity of this technique. The rationale behind the inclusion of leadership in this study was that a considerable number of studies has found significant correlations between leadership status and social perception. These studies have been reviewed by Mann (1959) and will be discussed later on when we get to the analysis of the data collected in this study.

Traditionally, studies of leadership have suffered from two fundamental difficulties, somewhat inherent in the nature of the field. The first difficulty has been the lack of a generally acceptable definition of the term "leader" and of the traits, functions and expectations characterising the office of leadership. The second snag has been that of finding a reliable measure of leadership. The first difficulty has resulted in a multitude of definitions and ad hoc postulates; the second has led to a babel of tests and techniques (cf. Janda, 1960). That this state of affairs is not limited to the study of leadership but is as prevalent in other fields of social

psychology is only more regrettable.

In our study, the definition of leadership was implicit in the technique of measurement employed. We simply asked our subjects to name five of their classmates whom they would choose as their representatives in an important conference of student leaders in London. Thus our tacit assumption was that the members of our groups should have some degree of awareness of the kind of characteristics expected from a student leader as well as the potential bearers of these characteristics among themselves. We did not say anything about what these characteristics were; nor did we make any attempt to see what the pupils themselves had in mind when they made their choices. In analysing our data, however, we will see if there were any significant differences between those over-chosen on this question and the group as a whole on such personality measures as we have employed.

Peer-nomination or peer-rating - as the technique in question is usually called - has been one of the well-known methods of assessing leadership. Its ease of construction and application has made it particularly suitable for military use (Jenkins, 1947). Besides its simplicity

the method is credited with a high degree of reliability and validity. Wherry & Fryer (1949), studying in an officer training school, found that "buddy ratings" as the method is known in the military circles, appeared to be the purest measure of leadership. The criterion of nomination was "five men who possess the personality traits most desirable in an army officer" and "five men who possess the personality traits least desirable in an army officer". They found that nominations by peers on these criteria provided more reliable measures than any other technique employed, such as graphic ratings by peers, by tactical officers, or by academic instructors. This was reflected in a test - retest coefficient of correlation of .75 (after one month) and .58 (after four months) between the scores on peer-nominations. No other criterion produced even half this degree of coefficient of correlation. As to the validity of the peer-nomination method, they found that the correlation coefficient between buddy ratings and remaining in the school at least for two months or for graduation from the school were as high as those between academic grades and these criteria of success, (i.e. a .70 and .49 for

buddy ratings and .71 and .50 for the academic grade and the two criteria of success respectively). To the credit of the peer-nomination, it was also found that, except for prediction by the aptitude test, nominations were better predicted by all of the proposed selection devices than was the more commonly used academic grade criterion. These findings were confirmed in a study by Gibb (1950). Arguing against the identity of leadership and sociometric status, Gibb asked the members of several groups to nominate their leaders, once in terms of a definition of leadership based on the concept of influence and once without any definition. He found a tetrachoric correlation coefficient of .80 between leadership determined in this way and that determined by the ratings of trained observers, whereas, the correlation between leadership position and sociometric status ranged from .25 to .65. Gibb concluded that members of a group had a sound idea of what was meant by leadership and that their idea of leadership presented a striking similarity to the notion of leadership defined by him in terms of influence, mutual interaction and integrative co-operation. At about the same time, Bell

and French (1950) found a high degree of stability in the leadership position of an individual, as determined by peer-nominations. This stability was represented by an average correlation coefficient of .75 for the members of thirty small discussion groups. These findings have further been corroborated in a study by Hollander & Webb (1955) who have demonstrated that peer-nominations for leadership are by no means a total function of friendship ties and that friendship plays only a minor part in the nomination of leaders. The evidence so far presented, although by no means exhaustive or conclusive, seems sufficient enough to warrant the use of peer-nomination as a measure of leadership.

The discussion above raised the question of the relationship between leadership position defined by peer nomination and sociometric status. Indeed, many students of leadership have based their whole studies on an ordinary sociometric test contending that the so-called over-chosen individuals or "stars" are nothing but the leaders of the group. Staggill's (1948) survey of the leadership studies has recorded no less than 28 studies of this kind. The line of argument is best represented by the work of Jennings (1957, 1950, 1958). Jennings (1950) has treated

those scoring about one standard deviation above the mean choice status of their group as leaders and those scoring one standard deviation below the group mean as isolates. As evidence, she reported almost one-to-one relationship between being over-chosen on the criteria of living and working together and being elected as a member of the Community Council - a body responsible for the liaison between the school administration and the pupils. Her findings, however, have not been confirmed by other studies. Gibb (1950) found relatively low correlation between being nominated as a leader and being chosen on a sociometric test. He concluded that "socio-telic and psyche-telic choices are not identified in the minds of participants with leadership." He proposed to call the over-chosen individuals "socio-centers" rather than leaders. Gibbs' (1950) findings seem to have been supported by many other workers (e.g. Bales, 1953; Cattell & Stice, 1954; Hollander & Webb, 1955). Bass (1960) has also argued against the identity of leadership and sociometric choice status. He has called the latter "esteem" rather than leadership.

No doubt, there will be some degree of overlapping

between the sociometric status and the leadership position because of some common factor. This communality should be greater for the socio-telic situations. And it is quite logical to expect the amount of overlapping to vary with the kind of group studied, with the criterion of choice employed and with the sort of demands imposed upon the leader, to be nominated. Nevertheless, to expect full identity between choice status and leadership position seems to run counter to the foundations of the sociometric technique. It is interesting to note that the term "leadership" does not occur in the index of Moreno's "Who Shall Survive" (1953). The term "sociometric leadership" does occur once in the index but there is no mention of it on page 680 to which it is referred. The page, headed "Sociometry and Group Dynamics" includes a critique of some of the errors made "in the course of the history of sociometry which have added greatly to the confusion as to what sociometry represents" (p.679). One of these errors is said to be "the blanket" assumption that an individual's sociometric score, whether calculated by the crudest or by the most refined techniques, is a

measure of his acceptance by the group." This is, "if not a fallacy, at least a not wholly true interpretation of sociometric facts" (679-680). The rest of the page is devoted to Lewin's "group decision" and bears no relationship to leadership, nor does the rest of the chapter! We will discuss this matter again in connection with the results of our own study.

POPULARITY AND ITS MEASUREMENT

Another item in our questionnaire asked for the subjects' choice of five classmates whom they regarded as most popular and, where we were permitted, five whom they regarded as least popular. The inclusion of this dimension of group relations in our study was prompted by the existence of a large number of studies indicating some degree of relationship between popularity and social perception. Our approach to popularity and indeed our tacit notion of it, however, differed from that of other studies. The following discussion is an attempt to justify our approach.

Since the advent of the sociometric test, it has been widely used and interpreted as a measure of popularity. This interpretation is particularly prevalent

among those sociometrists who are essentially concerned with the educational situation (e.g. Evans, 1962). This use of the term "popularity" as an equivalent of sociometric choice status does not appear to be in accord with the commonsense meaning of the term. In ordinary usage, "popularity" implies the quality of being liked by an aggregate of people but without reference to any specified reason or purpose. The sociometric choice status, on the other hand, is a matter of individual preference and with reference to a specific criterion of choice. Another difference, it seems to us, is that popularity is much less ego-involving, in the sense defined by Sherif & Sherif, (1956), than the sociometric choice. One's choice of companions on a sociometric questionnaire takes place with direct reference to one's self-image and one's expectations as to the potential reactions of the other members of his group as well as the requirements of the purpose for which the choice is made. Whereas, the notion of popularity, and to some extent that of leadership, is free from these self-referent considerations.

The founders of sociometry seem to have been well aware of this distinction, and have not used the term

popularity as an equivalent of sociometric status. Indeed, Marenco's (1953) work does not even mention the term in its index. Nor does the term occur in the index of the recent reader edited by Marenco et al (1960). This indicates that the sociometrists themselves have been reluctant to use popularity as a technical term. Some of them, however, have used the term notwithstanding the conceptual difficulties involved (e.g. Thorpe, 1953). And Mann (1959) had enough material at hand to include popularity as one of his six measures of an individual's behaviour and status in a group. Although Mann is not explicit on what he means by popularity, it is apparent that he has used the term as an equivalent for sociometric status and that the overwhelming majority of the studies surveyed by him are simply studies of sociometric status. As far as we were able to trace the literature, the only study using peer-nomination as a technique of measuring popularity, is a study carried out by Jennings and reported as a foot note for her original study (1937). Jennings made a distinction between popularity and position in a psychological structure. She compared the outcome of a popularity vote against the results of a sociometric question and found that there was a wide discrep-

ancy between the two distributions. Her conclusion was: "It may be that the "votes" and the "choices" tapped two relatively different things. "Popularity" may be based more on qualities which appeal at distance and become flat within the relatively shorter psychological distance of the intimate group". (pp. 133-34 f.) This same conclusion has been repeated in Jennings' later study (1950).

Peer-nomination approach to the study of popularity not only can elucidate the relationship between social perception and popularity - in the common sense definition of the term - but can throw new light on the subjective-affective concomitants of sociometric choice process.

The two items designed to measure leadership and popularity were presented as part of our sociometric test. In the second study, where negative items were allowed, a further question was asked concerning the least popular members of the class. The whole text of the sociometric test can be found in Appendixes I ~~and II~~ of this work.

PERSONALITY DIMENSIONS AND HOW THEY WERE MEASURED

Reviewing the literature on the relationship between personality and small group status, Mann (1959) commented

that "the field of personality assessment is test rich and integration poor" (p.242). He had found no less than 500 different measures of personality in the studies meeting his somewhat restrictive criteria of selection! This evidence suffices to indicate the difficulty of selecting from among the large number of tests of personality available. The existence of contending systems and schools but makes the position more difficult.

Our choice of personality dimensions and measures was guided by a number of considerations. In the first place we decided that the dimension chosen should at least bear some degree of face-relationship to the situational variables under study. In the second place, it was deemed necessary that the dimensions chosen should be theoretically oriented and experimentally established. These conditions seemed to be satisfied by the dimensions of Extraversion-Introversion and Neuroticism as developed by H.J. Eysenck and his followers. On the one hand, most of the studies of the relationship between social perception and personality factors agree in finding a positive relationship between these dimensions and social perceptiveness or social sensitivity; on the other hand the two dimensions have

been subjected to enough experimental treatment, statistical handling and theoretical speculation to be regarded as established and worthy of further study. Carrigan's (1960) re-appraisal of the field deserves some attention here.

Her extensive review of the literature seems to have cast some doubt on the status of Extraversion and Introversion as a dimension of personality. On the one hand, it failed to bear out the Unidimensionality of Extraversion as shown by Eysenck and his followers; on the other hand, it revealed that the hypothesis of no-relationship between Extraversion-Introversion and Neuroticism-Adjustment as held by Eysenck was far from proven. Since then, however, Eysenck & Eysenck (1963) have provided new experimental evidence in support of their view. As a result of a factorial analysis of of a 66-item questionnaire given to a sample of 300 men and women, they concluded that Extraversion may be regarded as a unitary factor depending somewhat on the definition of the term "unitary" (which they take to mean "composed of non-independent constituent units"); and that Extraversion and Adjustment are essentially

independent. However, they concede that Extraversion may be regarded as composed of two separate traits of sociability and impulsiveness which correlate about 0.5 with each other in two independent samples. They also admit that sociability has a slightly positive correlation with adjustment, whilst impulsiveness has a slight negative correlation. As a theoretical speculation to fit these findings into Eysenck's (1957, 1960) general theory of personality, they add: "It is not inconceivable that sociability is more easily subject to environmental control, while impulsiveness may have deeper roots in heredity". (Eysenck & Eysenck, 1963, p.54.)

That Carrigan's (1960) disappointing conclusions have not detracted from the dimension of Extraversion-Introversion or the work of Eysenck is well attested by the space afforded them in such texts as Allport's (1961) and Vernon's (1963) as well as the spate of research published in current periodicals. Indeed, Allport has gone so far as to call Carrigan's (1960) criticisms "mathematical exercises rather than psychological reasoning". Studies of the qualities of good

judges of personality have repeatedly found the introverted individuals to be superior to the extraverted people (Allport, 1937; 1961; Bruner & Tagiuri, 1954; Taft, 1955). Allport's (1937) summary statement seems to enjoy the support of all later reviewers: "Experiments have shown that there are generally certain social trends in the personalities of the best judges. Introversion is more common among them than extraversion, and the best judges tend themselves to be enigmatic and hard to judge." (p. 515). Allport (1961) himself has somewhat qualified his earlier statement: "Although the good judge is successful in social relationships, and reasonably warm and friendly, he is also to a considerable extent detached. Very often he proves to be an introverted person who is himself enigmatic and hard to judge, even though he adjusts successfully to others." (p.510) This notion of introverted but well-adjusted fits well into Eysenck's theory of personality which does not admit any relationship between introversion and neuroticism dimensions (Eysenck, 1947). In the same way, most studies have found a negative relationship between social perception

and maladjustment."Most studies show that good judges are socially skilful and emotionally stable. On the whole they are free from neurotic disorders. They are rated high in leadership and popularity" (Allport, 1961, p.510.). Thus, granted that there is a general ability of social perception regardless of the technique used, we should expect to find some degree of negative correlation between our measures of social perception and Extraversion - Introversion and Neuroticism. But this hypothesis does not seem to be compatible with other experimental findings regarding the personality correlates of leadership and popularity in a group. Mann's (1959) review of the field leaves no doubt about the existence of a significantly positive - though small - relationship between leadership position and extraversion. The same is true of popularity. In view of the high relationship between leadership and popularity and social perception (Mann, 1959), the negative correlation between social perception and extraversion seems, at best, confusing. Is this a product of faulty experimental techniques employed in measuring social perception or an indication of the possibility

that there is more than one kind of social perception? We will come to this point again in discussing our own results.

To measure personality we used the Junior Maudsley personality inventory. Designed by Furneaux & Gibson (1961) the test is the only one of its kind suitable for use with children between 9 and 14 years of age. It consists of 50 items⁽ⁱⁱⁱ⁾ derived by a factorial analysis from Pintner's Children's Personality Inventory (Pintner et al, 1938). Pintner's Inventory consisted of 105 items and was designed to measure the dimensions of Ascendence-Submission, Extraversion-Introversion and Emotional Stability in children. A somewhat rearranged form of the inventory was administered to 156 children and the correlation coefficient between each of the 105 items and each of the three scales were subjected to a factorial analysis. In the last analysis, two orthogonal factors were established each represented by 22 highly correlated items. Intercorrelations between extraversion items ranged from 0.29 to 0.80 with a mean of 0.52. Those between Neuroticism items ranged from 0.28 to 0.64,

(iii) The first six items are not counted in scoring.

with a mean value of 0.45. The split-half reliability of the Extraversion scale proved to be 0.80 and that of the Neuroticism scale was 0.76. The correlation between the two scales was found to be -0.10 which can be regarded as very satisfactory. The interpretation of the scales as Extraversion and Neuroticism, the authors admit, rested on a purely subjective judgement of the items representing each scale. However, when administered to a group of 18 children from a school specialising in the education of difficult and maladjusted children, 80% of them obtained scores for Neuroticism which were greater than the median score for children in other schools ($P = .09$).

The original test was standardised on a group of 78 girls and 78 boys between the ages of 9 and 14, and yielded means and standard deviations of 12.39 and 3.54 on extraversion and 7.35 and 3.34 on Neuroticism. Since then, however, the test has been administered to several large groups both in this country and in Canada. Callard & Goodfellow (1962) gave it to 3559 boys between the ages of 11 and 14 years 11 months, comprising the whole secondary school population under the jurisdiction of the

L.E.A. in Exeter as well as a sample of secondary schools in Devon County. The general tendency for their population was somewhat lower on both Extraversion and Neuroticism. However, there were no significant differences between the Extraversion and the Neuroticism averages of rural and urban schools of the same type, though there was a slight tendency for the urban schools to have higher extraversion averages. In the case of the Neuroticism, the variance of the urban scores was slightly greater than that of the rural scores in the secondary modern schools and the children of the urban grammar schools had higher Neuroticism averages and variances than their rural counterparts. Grammar school children, both urban and rural, were lower in Neuroticism scores than the pupils of secondary modern schools of any kind and than the comprehensive school children. The Neuroticism average for the comprehensive school fell between the secondary modern and grammar school scores of both urban and rural schools.

In all the urban secondary modern schools and in one of the three rural secondary modern schools under study, also in the only urban grammar technical school

included in the sample, the averages for the A (i.e. more intelligent) groups for the Neuroticism were significantly lower than the non "A" (less intelligent) averages. The three rural grammar schools and the comprehensive school showed no significant difference between A and non A group Neuroticism averages. However, a combined average score for Neuroticism for all the secondary modern A groups was found to be very significantly lower than a combined average for all the grammar non A groups. No significant differences were found between the extraversion averages of different types of schools. These findings are indicative of the diagnostic validity of the Junior Maudsley Personality Inventory.

In another study, Castello & Brachman (1962) applied the test to a group of 261 male and 248 female high school children in Canada, between the ages of 14 and 16, and to 304 male and 230 female English comprehensive school children between the ages of 14 and 16. They found that while the difference between the means of their Canadian and English samples and that found by Furneaux and Gibson was not significant for Extraversion

scores, it was significant (at .01 level) for Neuroticism scores. Both English and Canadian groups scored lower on Neuroticism than the original population of Furneaux and Gibson. However, no significant difference was found between the mean Neuroticism scores of their own English and Canadian samples. The difference between the original English sample and their samples may have been caused by the age difference between the two samples. The age range of the original sample was from 9 to 14 years, whereas their two samples ranged only from 14 to 16 years. This hypothesis is supported by Callard and Goodfellow's finding of a tendency - sometimes significant at 0.05 level - among their lower age groups (i.e. 11.11 to 12.11 years) to have higher Neuroticism scores than the older age groups (i.e. 13 to 14 years 11 months). As for Extraversion scores, the tendency was reversed and the older age groups tended to have higher Extraversion scores. These large scale applications of the J.M.P.I. have produced sufficient data to warrant the use of the inventory in this study.

THE GUESS WHO TEST

Peer-ratings have long been used for assessing personality. In many situations, the peer ratings can provide information unattainable by any other measure. Even where ratings by superiors or self-ratings by the subjects themselves are available, peer-ratings can profitably be used to cover different aspects of personality. Whereas only one or two superiors know a subject well, ten to thirty raters may give information when ratings in a class or a group are collected. As a consequence, the average rating on any trait is highly reliable. Indeed, for well defined traits in a group which has had reasonable opportunity to become acquainted, composite peer-ratings generally have reliabilities in the neighbourhood of .90. They are not lacking in validity either: among adolescents, correlations between peer-ratings and careful observations of corresponding behaviours range from .45 to .70 (Cronbach, 1960).

As a peer-rating technique, the "Guess Who Test" is as old as the sociometric technique itself, since it goes back at least to the character studies of Hartshorne,

May and Maller (1929). The technique involves presenting the subjects with samples of behaviour or descriptions of personality and asking them to guess or identify those among the members of their group who best fit the descriptions. Thus the technique bears very close similarity to the sociometric test and has widely been used in connection with or as a supplement to it. A number of studies have found very high correlations between the results of the two techniques. Eng (1954) for example, has found that the Guess Who Test was the best single prediction of the sociometric status in a group. Pritchatt's (1964) recent study of some grammar school children in England confirms Eng's results in finding a high correlation between Guess Who and Sociometric Tests. But it fails to bear out the relationship between a person's Guess Who Test score and his sociometric choice status. It is concluded that Guess Who characteristics can tell us very little about the reason for sociometric choice. Though individuals put down the characteristics they find in a friend they often do not attribute them to the person they in fact choose as their friend. Its ease of construction and application makes

the Guess Who Test of singular interest for use by teachers (Fleming, 1958) and some writers have argued that the more indirect manner in which the test is couched makes it more useful and productive than the ordinary sociometric test (Lindzey & Bergatta, 1954).

The Guess Who Test was the latest measure applied in this study. Its adoption was prompted by two somewhat different considerations. On the one hand, the diagnostic failure of our personality measure (J.M.P.I.) to differentiate between the over-chosen - under-chosen or more sensitive and less sensitive members of our groups made us think of another measure of personality. The relatively high agreement between the mean scores of our groups on J.M.P.I. with those of other studies made it seem improbable that the diagnostic failure of the test be due to its lack of validity or reliability. Bearing in mind the low - although more or less significant - correlations found between sociometric status and some similarly designed and oriented measures of Extraversion and Neuroticism (Thorpe, 1953, 1955) it was considered more probable that the lack of significant correlations might have arisen from the basic weakness

inherent in the construction of the test rather than any external disruption or genuine lack of correlation. It is a truism to say that the relationship - if any - between such dimensions of personality as Extraversion - Introversion and Neuroticism - stability and such group variables as sociometric choice status and leadership is given rise to by the behavioural implications of these basic personality dimensions in real interaction situations. Obviously, the greater the objective and palpable manifestations of these dimensions, the greater is the probability of their being observed by other participants in the interaction and the higher is their chance of influencing the process of interaction. Thus, to take the dimension of Extraversion, it is not sufficient that the subject should endorse a certain number of questions with a certain degree of statistically defined "E-loading" in order for this endorsement to have any effect on the behaviour - objective or subjective - of other members of the situation. But, he should be seen as possessing those characteristics by others and, also, those characteristics should bear the same significance for these ^{others} as they do to the designer of the test. J.M.P.I.

and other inventories of its kind fall somewhat short of attaining these ends for a number of reasons. In the first place, they are subject to such artificial influences as acquiescence response set, or the human tendency of yea-saying (Cronbach, 1950), and social desirability or the tendency to endorse socially agreeable items at the expense of the less agreeable items (Edwards 1957) as well as many other evils arising from lack of motivation or from straightforward dishonesty (conscious or unconscious) on the part of the subjects (iv). In the second place, items comprising these E - N scales are usually biased towards a subjective type, making it difficult - if not impossible - to trace their manifestations back to the ordinary, observable interaction situations. In fact, we found it very

(iv) Indeed, Jackson & Messick (1958) after an extensive review of the field, have come to the conclusion that "In the light of accumulating evidence it seems likely that the major common factors in personality inventories of the true-false or agree-disagree type, such as the MMPI and the California Psychological Inventory, are interpretable primarily in terms of style rather than specific item content." (p.19)

difficult to find a dozen items among the 160 and odd E-N items presented by Eysenck & Eysenck (1963a, 1963b) and the J.M.P.I. which could be regarded as sufficiently objective and observable to be included in our Guess Who Test! Of course part of this was due to our a priori adopted criterion of judgement which stressed those aspects of personality and behaviour which appeared to be of direct consequence to the other members of the interaction situations at hand.

One reason for the adoption of the Guess Who Test was to provide us with a picture, although admittedly crude and primitive, of the way the subjects regarded each other in terms of certain traits or descriptions which seemed to be of consequence to the efficient functioning of the groups under study. Another reason for its inclusion was to provide a second measure of social perception. For this purpose the test was re-administered with new instructions asking the subjects to guess or predict the items in which their names were likely to have been mentioned by others as well as the names of those others who, they thought, had mentioned their names on each item. At the same time the subjects were asked to decide which items described them best, In

this manner, the Guess Who Test provided:

- I. A picture of the subjects as seen by their peers;
- II. Their self-concepts;
- III. Their perception of the way others saw them.

In a sense, all these are a type of social perception. But, in the stricter and more common definition of the term, only the third process, i.e. predicting the evaluative judgements directed towards one by his group members, can be regarded as a measure of social perception. Processes involved in and restrictions imposed upon the act of perception or judgement in this situation are quite similar to those of perceiving one's sociometric status. This similarity makes the comparison of the two kinds of perception both possible and interesting in its own right; we shall discuss this point in a later chapter.

The Guess Who Test consisted of 20 items. Three of these items (Numbers 1, 3 and 17) enquired about the academic achievements of the subjects in Sport, English and Mathematics - subjects directly involved in the choice situation facing the groups. The remaining 17 items were adopted from such sources as Gordon's personal profiles (Abdel-Rahman, 1963), Davies' Test of Confidence (Davies, 1954), and Eysenck & Eysenck's (1963b) Extraversion-

Neuroticism items. The selection of these items was deliberately biased towards Extraversion and Neuroticism dimensions. Thus, questions numbers 2 (to take life easily), 4 (to be very fond of people) and to some extent 10 (to have a very good sense of humour) are obviously representative of Extraversion, and questions numbers 12 (to be shy) and 14 (to be uninterested in being with other people) speak unmistakeably of introversion. In the same manner, questions 5 (to be offended easily), 9 (to be ill-tempered and quarrelsome) and 11 (to worry a lot about one's failures) can easily be interpreted as Neuroticism or emotional instability, while questions 6 (to be sincere and reliable) and 8 (to be co-operative and friendly) can be as easily interpreted as the positive pole of the Neuroticism. Questions 7 (selfishness) and - perhaps - 13 (to be bossy and domineering) represent the opposite of 6 and 8 and can be fitted into other traits of the Neurotic dimension. Item 20 (to be sure of one's ability) and its opposite items 16 (to have a very low opinion of oneself) and 19 (to get stuck frequently and grow disheartened) are taken from Davies' study of confidence (Davies, 1944) and are purported to measure confi-

dence and diffidence respectively. They also can be fitted into Eysenck's two dimensional scheme. Items 15 (to have a strong influence on others) and 18 (to take the lead in group activities) can be interpreted as measures of Extraversion. In short, the whole 20-item test can be fitted into the two-dimensional diagram recently presented by Eysenck & Eysenck (1963b)*. (See Fig. 1)

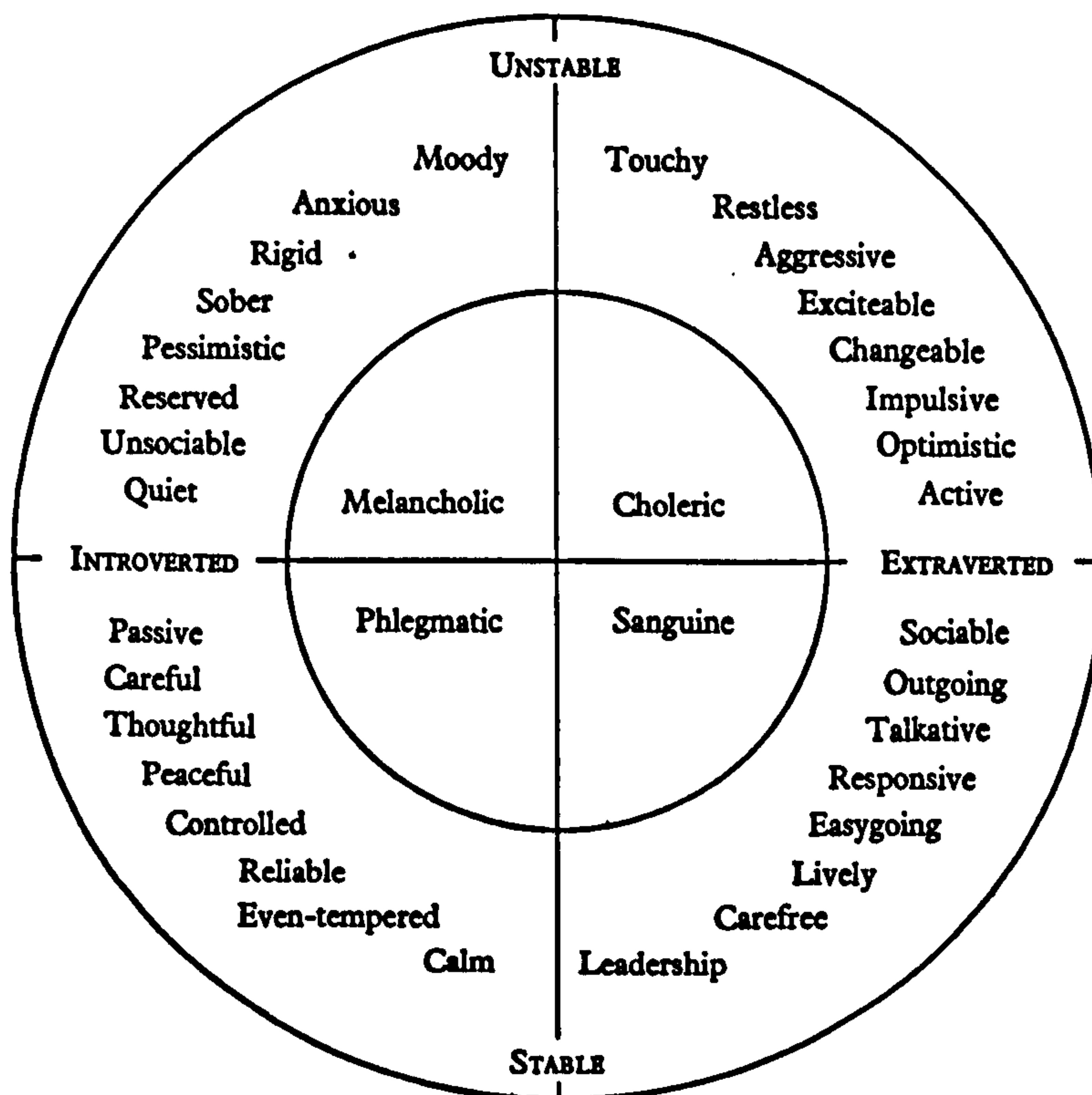


Fig. 1. Diagram showing approximate position of various traits in two-dimensional factor space. Also shown are the four classical 'temperaments' or 'humours', corresponding to the four quadrants.

The text of the Guess Who Test is reproduced in Appendix ² ~~IV~~ ² ~~IV~~ and ~~IV~~.

THE SUBJECTS OF STUDY

The data were collected in two stages. First the tests were given to a group of 84 girls and 61 boys comprising the population of five classes in a county secondary school in Surrey. The age range was, approximately,

* Brit. J. Psychol. (1963), 54, 1, pp. 51-62

from 12 to 14 years but the majority of subjects were between 13 and 14 years. The five classes represented five different ability groups. The school records provided the necessary information concerning the abilities of the subjects. The study took place in one day in June 1963.

The same test material - with minor revision - was administered to another group of school children in a county secondary school in Leyton. It was given to three classes of children between the ages of 13 years and 14 years four months. There were altogether forty-five girls and forty-seven boys. However, on the day of testing seven girls and three boys were absent and this reduced the number of subjects to 94. Here again the four classes represented four ability groups and the I.Q.s of subjects could be obtained from their school records. The main difference between this study and the first one was that here we were allowed to inquire into the negative feelings of the subjects as well as their positive choices. Also the number of choices and rejections allowed was five instead of the four in the first study. The testing was carried out in February 1964.

**PAGE
MISSING
IN
ORIGINAL**

SECOND STUDY

INTRODUCTION

The second part of this study is concerned with an investigation of social perception in a group of more mature training college students. Although the subjects and measures employed are basically different from those of the first part, the purpose, rationale and general guiding lines of the study remain the same. As before, social perception is defined as the ability to predict the probable responses of others to certain aspects of their environment. Obviously, both the kinds of responses to be predicted, and the kind of stimulus-situations evoking them can vary enormously. The same is true of the type of organism whose behaviour is to be predicted. All these three variables need further clarification and delineation. So also does the variable of the predictees, i.e., the sample of individuals whose social perceptiveness is under study.

On the response side, we are primarily concerned with the verbal or symbolic responses. As will be seen later on in connection with the description of our tests, the responses in question are mainly of a symbolic nature involving no more than the underlining of an alternative response-category, distributing a set of numbers in a pre-determined way and putting down one of the three mathematical symbols. All these symbolic responses have

been defined in the instructions preceding each test and are governed by these instructions. Whether these symbolic responses can be relied upon to represent anything in the realm of real behaviour is of little significance from our point of view. Let the students of behaviour worry over the possible correspondence or lack of correspondence between the movements of the large and small muscles. As far as this study is concerned, we are quite happy with the small muscles, both in our predictors and those whose behaviour is to be predicted. This is not meant to be taken as a sign of our "unscientific disregard" of the objective aspects of human behaviour. Far from it. Ours is only a humble confession that, under the circumstances, we were in no position to go beyond a sample of the verbal responses of a certain group of people and equally verbal predictions of the same by another group.

On the side of the response-evoking stimulus situation, again we must admit that our stimuli were no more than verbal statements, propositions and questions. Again the thorny question of the correspondence between these verbal utterances and actual behaviour must be left to the original designers of these inventories. In the later sections of the chapter we shall have an occasion to present some evidence bearing on the validity of our situational stimuli. It begs no question that the possible

range of verbal stimulus situations is practically unlimited and some sort of choice or selection is called for. The choice of the stimulus situations employed in this study was prompted by a number of considerations. In the first place it was thought necessary that the sample of questions chosen should represent as wide a range of behaviour as practically manageable. In the second place, the verbal stimulus situations presented should be known to and bear a certain degree of significance for the responding individuals in order to evoke genuinely reliable responses. Many attitude scales have suffered from the fact that they have tried to measure things which did not exist for the individuals concerned. In the third place, it was considered important that the situational stimuli should be known to have a psychologically respectable parentage, should enjoy a certain degree of stability and bear some statistically proven relationship to objective behaviour and the activities of the large muscles.

These conditions seemed to be satisfied by the Inventory of Social Attitudes developed by Eysenck, the Study of Values, British version, designed by Richardson, and Eysenck's shorter form of the Maudsley Personality Inventory. These measures will be described in detail below. Having chosen our media of response and prediction, it remained to be decided whose response must be predicted. As was indicated in the first chapter, studies of

social perception have employed as "predictees" from life-long spouses (Notcutt & Silva, 1952) to complete strangers known only through filmed interviews (Cline, 1955). There is every reason to believe that the two tasks differ in the kind of demand they make on the individual predictor. There is a large gap between the information available and the extent to which one has to - in Bruner's (1956) words - "go beyond what is given". The sheer gap between the volume of "input" and "output" involved renders any preconceived notion of generality of the performance under these extreme conditions untenable.

Guided by the findings of other studies - as reviewed in the first chapter - we decided to make a distinction between two categories of predictees, that is, others in general and specific others. The first category is employed to depict the predictors' degree of awareness of the probable responses of the majority of their cultural group to a given situation. In other words, it represents the dominant response tendencies of the majority of a cultural group in the face of a given situation. The category was further classified into the two main sub-groups formed by the male and the female members of the society. The aim was to find out whether people showed the same degree of acumen in predicting the verbal behaviour of the opposite-sex group members as they demonstrated in predicting the responses of their own sex.

The second task - making predictions for specific others - was regarded as a gauge of the predictors' ability to perceive the probable deviation of a given individual from the prevalent group norm. The logic of scientific enquiry would demand that a statistically selected sample of "specific others" be used for all predictions. But this logical requirement could not be met and had to be sacrificed for the practical exigencies of the experimental condition. The time available for giving the tests was simply too short to afford such logical luxuries. So it was decided to cut the number of the specific others to two, selecting them in such a way as to allow for the degree of acquaintance to affect the outcome of prediction in a roughly controlled way. Thus each subject was required to choose two others from among those taking part in the study: one whom he knew well and one whom he did not know well. In this manner, it seemed possible to make allowance for the interplay of acquaintance and social perception. The degree of acquaintance, however, was left undecided depending on the subjective interpretation of the predictor. The area of choice was restricted to the group taking part in the study so that the predictions made for each individual could be compared against his own responses to the same situations.

In short, then, the experiment consisted of giving the subjects a batch of paper and pencil tests covering various aspects

of human personality, and asking them to answer the tests:

1. From their own point of view;
2. From the point of view of the majority of men in their age group and with the same sub-cultural and educational background;
3. From the point of view of the majority of women in their age group and with the same educational background;
4. From the standpoint of a groupmate well-known to them, and
5. From the viewpoint of a groupmate not well-known to them.

The consideration of the number of different times each test had to be taken made it imperative that the length of the tests used should be kept down to a minimum.

The tests used are as follows:

1. INVENTORY OF SOCIAL ATTITUDES

Designed by Eysenck (1947), the Inventory consists of 40 items purporting to measure the two basic attitudinal factors of Radicalism and Tender-mindedness. The method used in its construction "took account of previous work, both factorial and non-factorial, to discover in its broadest outline the total universe of social attitude questions as defined by social psychologists, sociologists, and statisticians active in this field. From a total of some 500 items, all those were selected which had been shown to have high saturations on any factor isolated by any method whatever. When pruned of duplications, it was found that these items did not suffice to make up the minimum number

considered requisite for a thoroughgoing study, and others were added by random selection until forty items altogether had been chosen. These items, their wording changed appropriately to suit English conditions where necessary, were then put together in the form of a test, and given to various pre-testing groups who were encouraged to make comments and criticisms. Several changes were made in the wording of some of the items to meet the more general criticisms, but on the whole it was found that there was little agreement between critics as to which were the least satisfactory items. It is believed that the method of construction makes it likely that most of the areas subsumed under the heading 'social attitudes' are represented to some extent in the questionnaire; suggestions for further items were solicited from social and political experts, but without unearthing any items not covered in some form or other in our preliminary list from which the actual test-items were drawn. Thus the claim may perhaps be made that the method of item selection presents an approximation to a combined stratified (choice by factor-loadings) and random (remaining items) method of sampling." (Eysenck, 1947, 51-52)

The questionnaire thus constructed was given to a large sample of varying age, sex, educational and socio-economic background. Of these, those of 750 middle-class subjects were chosen in such a way that 250 were supporters of the Conservative party,

250 supporters of the Liberal party, and 250 supporters of the Labour or Socialist party. Tetrachoric correlations were calculated between each of the 40 items and all the others, giving a total of 780 correlations. A factorial analysis was carried out on the resulting correlation matrix, using Burt's Summation Method. Two bipolar, general factors were extracted first; the second factor residual matrix was then analysed by means of Burt's Group Factor Method, making use of sub-matrices which showed significant intercorrelations. It was found that the first factor contributed 18% to the variance, the second factor 8%, while the two group factors contributed 2% each. Altogether, the communality accounts for 30% of the variance.

The items which defined the first factor were clearly grouped into two opposing sets. On the one hand, there was a belief that private property should be abolished, that the death penalty ought to go, that Sunday observance is old-fashioned, that Jews are valuable citizens, that the divorce laws ought to be altered, that we should give up part of our sovereignty, that we should abolish abortion laws, that we should cure criminals rather than punish them, that laws favour the rich, that companionate marriage should be allowed, and that patriotism is a force that works against the peace. On the other hand, we have a belief that nationalization is inefficient, that compulsory religious

education is desirable, that the Japanese are cruel by nature, that we should go back to religion, that Jews are too powerful in this country, that flogging should be retained as a deterrent, that war is inherent in human nature, that conscientious objectors are traitors, that birth control should be made illegal, and that coloured peoples are inferior. Eysenck called this bipolar dimension the dimension of Radicalism vs. Conservatism and found that items highly saturated on this factor differentiated between the members of the Socialist and Conservative parties.

The second factor was also a bipolar factor, one pole being characterized by a belief that we must go back to religion, that birth control should be illegal, that the double standard of morality is bad, that religious education should be made compulsory, that our troubles have moral causes, that we should give up our sovereignty, abolish the death penalty, and attempt to cure criminals rather than punish them. The opposing set of beliefs approves of companionate marriage, wants to alter divorce, licensing, and abortion laws, considers the Japanese cruel by nature, the Jews too powerful, war inherent in human nature, Sunday observance old-fashioned, compulsory sterilization desirable, women and coloured peoples inferior, and conscientious objectors traitors to their country. To this bipolar factor Eysenck has given the name Tender-minded vs. Tough-minded, in the sense originally proposed

by William James. The tender-minded set of opinions appears to be dominated by ethical, moralistic, super-ego, altruistic values, while tough-minded set of opinions is dominated by realistic, egotistic, and worldly values.

The two dimensions were found to be somewhat negatively correlated, r being $-.12 \pm .03$ ($N = 750$). While there was a clear differentiation between the three political parties with respect to their Radicalism (R) scores, the Conservatives and Socialists being at opposite extremes of the dimension with Liberals in the middle, there was no significant difference between the three political parties with respect to the tender-mindedness (T) factor.

Of the 40 items forming the Inventory, 14 items have been scaled for measuring R and 14 others for measuring the T factor respectively. The possible range of scores on each dimension is from 0 to 14. The Reliability of the R scale was .81, that of the T scale was .64, their respective validities being .90 and .80. Since its appearance, the scale has been given to numerous groups in Britain, America, Germany and Sweden, with results very similar to those found in Eysenck's original study, showing the generality of the two basic attitudinal factors regardless of the cultural settings involved. The invariance of factors under change of items has been demonstrated by Melvin (1955) who, using 38 new

items as well as scores on the original R and T scales, reproduced the same factorial structure as Eysenck had found.

Since its development, the inventory has been used very widely by Eysenck and his students. Eysenck (1954, 1960) has given a thorough survey of these studies, and has made a daring attempt to build a general theory of political behaviour, linking it to his hierarchical view of personality organization based on the Pavlovian principles of Conditioning. The theory is too well known to require any detailed discussion here and Eysenck's own works are easily available. For critical evaluations of this theory, Christie (1956) and Rokeach (1956) must be consulted.

The use of this scale in this study was prompted by several considerations. In the first place, it provided a well-tried, factor-analytically defined measure of some very significant aspects of social attitudes. In the second place, the underlying attitudinal dimensions seemed to be among the most basic and important dimensions ever put forward, with supposedly decisive consequences for the social behaviour of the individual. Moreover, the importance of attitudes in judging or perceiving people has been emphasized by several writers. To Oldfield (1943) "it is chiefly the attitudes displayed by the candidate that form the basis of the interviewer's judgment". The same point has recently been stressed by Newcomb (1956). It is a safe surmise to say that

much of the predictions or judgements made in the course of practical encounter with others is in respect of their attitudes or behaviour potentialities as they relate to certain outstanding aspects of one's psychological life-space. The Inventory of Social Attitudes seems to cover a large area of the common life-spaces obtaining in this country.

2. TEST OF VALUES

The second measure employed was Richardson's British version of the famous Allport-Vernon Study of Values. The original test is an attempt to quantify Eduard Spranger's six-fold classification of man's dominant values. Richardson's is an attempt to make the test more suitable for use with the British subjects by rephrasing certain items and/or replacing them by new ones.

Spranger (1923) believed that man's dominant value orientations can be classified into six basic types. He contended that every actual person can be regarded as approaching (but not fitting perfectly within) one or more of these value directions.

The six types are:

1. The theoretical type, whose dominant interest is the discovery of truth. Since the interests of the theoretical man are empirical, critical and rational, he is necessarily an intellectualist, frequently a scientist or philosopher. His chief aim in life is to order and to systematize his knowledge.

2. The economic type, whose main characteristic is an interest in the practical utility of things. This type is thoroughly practical and conforms well to the prevailing conception of the average American businessman.

3. The aesthetic type, who sees his highest value in form and harmony. Each single experience is judged from the standpoint of grace, symmetry, or fitness. An aesthetic man need not be a creative artist; nor need he be effete; he is aesthetic if he but finds his chief interest in the artistic episodes of life.

4. The social type. The highest value for this ideal type is love of people. The social man prizes other persons as ends, and is therefore himself kind, sympathetic, and unselfish.

5. The political type is interested primarily in power. His activities are not necessarily within the narrow field of politics; but whatever his vocation, he betrays himself as a man of power.

6. The religious type. The highest value for this type may be called unity. He is mystical and seeks to comprehend the cosmos as a whole, to relate himself to its embracing totality.

It must be noted that Spranger does not believe that there are six main types of people. The typology is one of pure values, not of actual persons. The six types are more ideal than real. They only provide us with a measure of the extent to which given

individuals can be said to have organized their lives by one or more of these values. Spranger's classification suffers from the fact that it fails to embrace the whole range of man's dominant values. This is particularly true of the sensual aspects of man's orientations. Despite these shortcomings, the typology has proved very valuable in guiding psychological investigation of values (Dukes, 1955).

Richardson's version of the Study of values - like the original version - consists of two parts. In the first part, there are 30 statements or questions, each with two alternative responses. The subject is required to give the two alternatives different weights according to his preference. Each value type is represented by 10 items. The second part consists of 15 statements each followed by four alternative responses and the subject is required to show his preferences for each of these alternatives by giving them a score of 0, 1, 2, or 3. Again there are 10 statements or items for each of the six value types.

Reliability of the test: Richardson has provided some data bearing on the reliability of the test by estimating reliability coefficients from the biserial correlations between the scores of an individual on each value type and his responses to the individual items defining that type. Bhatnagar (1964) has provided further evidence of the split-half reliability of the test both

with the British and Indian students. These reliability coefficients are presented below. The last row of the table shows the inter-item reliability of the original test as reported in the manual of the Allport, Vernon and Lindzey (1960). All in all, the test appears to enjoy satisfactorily high degrees of reliability.

	<u>Aes.</u>	<u>Eco.</u>	<u>Pol.</u>	<u>Rel.</u>	<u>Soc.</u>	<u>The.</u>
Richardson's Study (N = 256)	.84	.83	.82	.95	.79	.78
Bhatnagar's { British (N = 75)	.89	.84	.80	.81	.72	.82
Study { Indian (N = 150)	.85.	.87	.92	.74	.63	.79
Allport-Vernon-Lindzey (N = 100)	.80	.87	.77	.90	.82	.73

Reliability Coefficients of Richardson's Test of Values.

Validity - The original version of the test is known to enjoy a high degree of "construct validity". It has proven successful in differentiating between the occupants of various occupations. (Dukes, 1955; Allport, Vernon & Lindzey 1960.) Richardson gave a written description of the Spranger types to her subjects and asked them to make self-assessments in terms of these descriptions. The self-ratings were then compared with either the scores of the subjects or the mean scores of their groups on the test. There was a very high degree of agreement between the two. Thus she concluded that the British version of the Test of Values was also measuring something very similar to the Spranger values. This finding has been corroborated by El-Meligi (1963). Further

support is lent by the finding that both the relative prominence of the various values in the samples so far tested and the differences between the scores in regard to certain values are in complete agreement with the published evidence gathered through the use of Allport-Vernon's original version. The following table summarizes the means of certain British samples on various values as studied by Richardson, El-Meligi and Bhatnagar. The

Studies:	<u>BHATNAGAR</u> (British)		<u>EL-MELIGI</u>		<u>RICHARDSON</u>		
Values:	<u>M.</u>	<u>S.D.</u>	<u>M.</u>	<u>Means of rating</u>	<u>Total</u>	<u>Men</u>	<u>Women</u>
Theoretical	34.53	7.74	31.5	3.1	32.39	33.32	31.45
Aesthetic	30.01	7.32	27.2	3.2	26.11	23.78	28.45
Social	41.53	5.68	41.7	1.8	40.02	39.44	40.60
Political	23.32	6.39	21.1	5.2	24.55	26.78	22.33
Religious	22.80	14.21	33.5	3.1	28.83	25.88	31.79
Economic	27.81	6.63	24.8	4.5	28.49	30.89	26.09
	75		42		400	200	200

Means of different British samples
on Richardson's Test of Values.

differences observed between the means of certain groups must be due to the different compositions of the groups involved as regards sex, age and social and economic background. All these factors are known to influence the value orientations of an individual.

The inclusion of the test in this study was prompted by the same general considerations discussed in connection with the

previous measure. Although the test is not factorially designed, the theoretical orientation underlying its construction seems sound enough to satisfy our above-mentioned conditions. Moreover, an investigation of the relationship between personality dimensions measured by this test and the empathic ability is of interest in its own right. For considerations of time, however, we had to confine ourselves to the second part of the test only.

3. MAUDSLEY PERSONALITY INVENTORY (Shorter Version)

We have discussed the relationship between the personality dimensions of Extraversion and Neuroticism and social perception in connection with the description of the Junior Maudsley Personality Inventory used with our sample of children. The only thing that remains to be discussed here is the test used for measuring these dimensions in our adult sample.

The test used is the shorter version of Eysenck's M.P.I. (Eysenck, 1959). Although M.P.I. itself is much shorter than most other questionnaires, nevertheless for certain purposes even 48 questions may be too many to ask. In cognizance of this fact, Eysenck (1958) has prepared a shorter form consisting of the first 12 items of the M.P.I. Six of these represent the dimension of Extraversion and Introversion and six others represent the dimension of Neuroticism vs. Stability. The two scales have been constructed on the basis of a factor analysis of the responses of 1600 British subjects taking part in a market research programme. Each item could

be responded to either by underlining "Yes" or "No" or putting a question mark. Only the affirmative responses were scored in the defined direction. Thus the E and N scores could vary only from 0 to 6. In actual fact, the mean E was found to be 1.96 and the mean N was .15. The correlation between the two scales was found to be $-.05$ and none of the E or N items had loadings on the other factor as large as $.10$. The corrected split-half reliabilities were $.79$ for N and $.71$ for E.

Recently, Eysenck (1959) has proposed to change the scoring method of the test by giving 2 scores to each positive answer and 1 score to each undetermined response (?). Using this scoring method the means of the E and N scales for the quota sample of 1600 were found to be 7.96 ± 2.97 and 6.15 ± 3.33 respectively. Split-half reliabilities on a new quota sample of 2000 men and women were found to be $.80$ and $.72$ for the N and E scales respectively. The correlations between the long and the short M.P.I. scales are reported to be $.86$ and $.87$ for N and E respectively.

Some evidence regarding the diagnostic efficiency of the test has been provided by Eysenck (1958). Thus women appear to score roughly $\frac{1}{2}$ S.D. higher than men on N, that is, they are less stable, whereas on E, the men have a score about $\frac{1}{6}$ S.D. higher than the women, that is, they are more extraverted. Class and age differences are also significant for N, the lower class and younger age groups being slightly more unstable emotionally by $\frac{1}{3}$ S.D. and $\frac{1}{5}$ S.D. respectively. As a further indication of the validity of the measure, it is reported that both scales of the

test differentiated between the two groups of drinkers and non-drinkers included in the sample. While non-drinkers appeared to be slightly more unstable than drinkers, the drinkers' mean E-score (2.48) was about $\frac{1}{3}$ S.D. larger than the mean E-score of the non-drinkers (1.55). These findings, in addition to the wealth of experimental data collected in connection with the complete form of the test, justifies the use of this short personality inventory for research purposes like ours.

Items of the shorter form of the M.P.I. differ from the items of our other two measures in one important respect. Their contents are more personal in nature than the items contained in the other two tests of attitudes and values. In other words, their degree of prevalence among the members of a cultural group - their social desirability - is much harder to ascertain. Thus they are hoped to provide a check on the generality of predicting ability over various questions or statements regardless of their degree of prevalence and social desirability.

One more point seems to be in order before we end the description of our measuring instruments. This is the question of independence or dependence of our three tests and their underlying dimensions of personality. Eysenck (1954) has given a survey of the literature bearing on this question. His main aim was to link the findings on the test of values with his theory of basic

social attitudes and fit them both into his hierarchical scheme of personality organization. A large-scale factorial study by George (1954) seems to bear out this conclusion. His findings are summarized in the following quotation: "It will be seen that the Radical-Conservative axis and the Tough-minded-Tender-minded axis are uniquely located in terms of the R-scale and the T-scale respectively. The value scores are located in the appropriate quadrants; the economic and political values in the tough-minded Conservative quadrant, the theoretical value in the tough-minded Radical quadrant, the social value in the tender-minded Radical quadrant, and the religious value in the tender-minded Conservative quadrant." (Eysenck, 1954, 178.)

SUBJECTS OF THE STUDY

The study was carried out in two different training colleges in England. The first was a newly-established day-training college catering for students of an older age level than those of ordinary colleges. It is a mixed college with a preponderance of female students. The second college is an old denominational boarding college which has recently been turned into a co-educational college.

In the first college, 57 individuals, comprising the members of 6 tutorial groups in education, took part in the study. There were 20 males and 37 females. The age range for the male

group was between 19 and 45 years with a mean of 28 years and a median of 26. The female group ranged all the way from 18 to 50 years, the mean age being 31.6 years and with a median age of 31. They were all first-year students. They had already been briefed about the nature and purpose of the study and received the first part of the test-administration with apparent enthusiasm. The tests were given in two separate sessions. In the first session the subjects were asked to fill the tests first from their own point of view and then from the point of view of the majority of male and female students of a cultural and educational background similar to theirs. In the second session, held about one week later, they were asked to fill the same test material from the point of view of two specific individuals in their group: one whom they knew very well and one whom they did not know well. Only 40 of the original group did complete the second part of the study. Twelve of them were men and 28 women. During the second session, some groups also filled in a 5-point rating scale assessing their group-mates in terms of sociability, intelligence, warmth, popularity, and leadership. The result of this rating-scale ~~can~~ be used to throw some light on the relationship between the ability to judge or rate others and the ability to predict the responses of others. It can also be used as a further check on the personality correlates of the ability under study.

In the second college, forty-nine people volunteered to take part in the study. Of these, 27 were women and 22 men. The age range for the women was from 18 to 21, the mean being 19.8 years. For men, the age range was between 19 and 29 years with a mean of 22 years. Thus the second sample provided a much more homogeneous group. Testing took place in one session. As in the first group about one-third of the sample had not completed the part of the test relating to the prediction of the responses of specific others, it was decided to redress the balance in this group by asking them all to fill that part of the test first and the part relating to the measurement of the sensitivity to the generalized other, i.e., the part requiring the prediction of the responses of men and women in general, later. Because of time shortage, however, only 27 subjects were able to complete both parts of the test and the remaining 22 subjects were asked to fill in the rating scale mentioned above.

The 49 subjects of the second college belonged to different years and different subject groups, the majority of them being second-year students. Most of them seemed quite interested and well founded in psychology and approached the study enthusiastically. Quite a number of them made their participation in testing conditional upon the results being made available to them. The following table summarizes the composition of this group in

terms of college year, major subject, and educational group.

The group was asked to give additional information regarding the size of their family and their birth status. This information will be used to see whether the high correlation between these variables and the ability to judge others (Taft, 1956) is also true of the ability to predict others' behaviour.

YEAR	FIRST	SECOND	THIRD	TOTAL
SUBJECT OF STUDY :				
ART			2	2
DIVINITY		3		3
ENGLISH	2	10	7	19
GEOGRAPHY	3	8	1	12
MATHEMATICS	1	3	1	5
POTTERY			2	2
WOODWORK & WEAVING		2		2
SCIENCE		3	1	4
TOTAL	6	29	14	49

DISTRIBUTION OF THE SECOND SAMPLE OF COLLEGE STUDENTS
ACCORDING TO THE SUBJECT OF STUDY AND YEAR.

CHAPTER IV: ANALYSIS OF THE RESULTS OF THE FIRST STUDY

1. AN OVER VIEW OF THE SOCIOMETRIC STRUCTURE OF THE GROUPS INVOLVED

This section is devoted to a brief description of the sociometric sub-structure revealed by the sociometric test. The study of this sub-structure seems desirable on two main grounds. On the one hand, there appears to be a very close relationship between the actual sociometric structure of the group and its representational picture as depicted by the perceptual or guessing section of our test. On the other hand, the question of the reliability and validity of our measures of social efficiency - i.e., leadership, popularity, etc., - can only be settled by looking into the network of interpersonal relations brought to the fore by the sociometric test.

A. INTER-SEX CHOICES

Looking at the sociomatrices of our eight groups, the most striking phenomenon is the very small amount of choices exchanged between boys and girls. Table^{IV} 1 shows the percentages of inter-sex choices on the first four criteria (i.e. working together in English and Maths classes, spending one's free time with, and liking most) for boys and girls of the eight groups separately. As is seen in Table^{IV} 1, the average proportion of inter-sex choices for the whole sample does not exceed 9.5 per cent of the number of choices made. This proportion varies all the way from 0% (group

VII, criteria 1 and 3) to 26.66% (group V girls, criterion 4). On the whole there are more girls' choices going to boys ($M = 10.4\%$) than the boys' choices going to girls ($M = 8.55\%$). This is particularly apparent in the first and last criteria of choice where the mean percentages of girls' choices going to boys are 12.8% and 13.2% as compared with the boys' means of 8.6% and 9% respectively. Nevertheless, none of these reach the level expected on pure chance basis (about 45%). This is well in line with the findings of other workers in this field (e.g. Bronfenbrenner, 1944-1945) and is indicative of the general tendency to withdraw from the opposite sex so characteristic of puberty (cf. Hurlock, 1959).

This same trend is also observed in connection with the perceptual aspect of the sociometric test. Here, the proportion of the inter-sex guesses is even smaller. As Table^{IV} 2 shows, the total average of guesses going to the opposite sex is just under 5% of all the guesses made. This is about one-half the proportion of choices actually exchanged between boys and girls. As the average percentage of the congruent guesses, i.e. guesses going with choices, for the whole sample is about 77%, it can be deduced that a further factor such as self-consciousness or modesty may have been responsible for lowering the proportion of inter-sex guesses. It is interesting to note that in contrast to the

Criteria :	1		2		3		4		Mean
	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls	
Group: I	4.3	15	4.1	8.3	11.9	6.6	2.4	16.9	8.7
II	8.3	13.9	8.3	6.9	6.2	6.9	14.6	11.1	9.5
III	20.8	23.5	16.7	10.3	14.8	4.7	11.1	8.8	13.8
IV	9.6	12.5	9.8	6.9	6.5	7.6	7.7	19.2	10
V	11.4	26.6	13.6	18.7	7.5	17.2	9	26.7	16.3
VI	6.7	8.7	12.9	10.1	7.6	6.4	13	9.1	9.3
VII	0	0	0	5	0	0	5.7	3.3	1.7
VIII	8.3	2.1	8.3	2	3.7	8	8.8	11.1	6.5
Mean:	8.6	12.8	9.3	8.5	7.3	7.1	9	13.2	9.5

IV
TABLE 1 : Percentage of Inter-sex Choices on Criteria 1-4 for Boys and Girls separately.

Criteria :	1		2		3		4	
	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls
Group: VI	21.2	54.9	7.6	53	13	29.1	21.7	63
VII	17.7	63.7	14.6	57.7	16.4	60.8	36.5	66
VIII	49.1	80.4	52.7	68	53.4	56.2	50.9	60.9
Mean:	29.3	66.4	25	59.6	27.6	48.7	36.4	63

IV
TABLE 2 : Percentage of Inter-sex rejections on Criteria 1-4 for Boys and Girls of the last three groups separately.

proportion of inter-sex choices, the proportion of girls' guesses going to boys (4.6%) is smaller than the proportion of boys' guesses going to girls (5.1%). This may be due to the cultural premium put on modesty in bringing up girls.

B. INTER-SEX REJECTIONS

Considering the sociomatrices of the negative versions of the first four criteria responded to by groups VI to VIII, the proportion of inter-sex rejections is seen to be significantly higher than that of inter-sex choices, the mean being 44.6%^{IV} (Table 3). Using Bronfenbrenner's (1944) formula, the percentage of boys' rejections going to girls on pure chance basis is found to be 47%, that of girls' rejections due to go to boys being 53%. The obtained values of these are 29.8% and 59.5% respectively. Thus there is a strong tendency among the boys and girls of our study to afford their negative feelings to their opposite-sex classmates than the same-sex ones. The tendency is much stronger for girls than boys. This finding is also in accord with those of other workers in the field of child development and sociometry. Girls' excessive rejection of boys at this level of development has been attributed to their accelerated maturity - both social and emotional - which makes much of their opposite-sex coevals' conduct seem childish and repugnant (Gesel & Ilg, 1957).

The proportion of inter-sex guesses of rejection is virtually

Criteria :	1		2		3		4		5
	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls	
Group : I	0	5	0	3.5	0	3.5	0	6	2.25
II	6.8	4.1	4.5	1.4	4.5	4.3	9.1	1.4	4.5
III	10.6	1.6	5	3.5	9	3.6	11.4	5.26	6.24
IV	2.17	4.2	8.5	2.8	2.7	3.2	5.9	5.7	4.25
V	6.8	4.8	7.7	3.6	7.5	8.6	2.6	10.1	6.5
VI	5.8	6.34	4.8	6.6	4.8	7.3	6.1	11.2	6.6
VII	0	0	0	0	0	4.3	3.6	0	1
VIII	10.9	10.2	10.1	4.3	1.8	8.3	11.3	2	7.1
Mean :	5.4	4.6	5	3.2	3.8	5.4	6.2	5.2	4.8

TABLE : 3 : Percentage of Inter-sex Guesses on the four criteria of Choice for boys and girls separately.

Criteria :	1	'	2	'	3	'	4	'	
	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls	
Group;VII	28.1	59.6	25	70	24.6	71	29.4	70	47.2
VI	20	35.1	23	50	22.1	26.3	23.4	39.3	30
VIII	27.9	72	43.1	72	44.1	55.1	59.2	74	56.6
Mean	27.3	55.6	30.4	64	30.2	50.8	37.3 _T	61.1	44.6

TABLE 4: Percentage of Inter-sex Guesses on the four criteria of Rejection for boys and girls of Groups VI-VIII.

Criteria :	1		2		3		4		
	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls	
Group : I	0	5	0	3.5	0	3.5	0	6	2.25
II	6.8	4.1	4.5	1.4	4.5	4.3	9.1	1.4	4.5
III	10.6	1.6	5	3.5	9	3.6	11.4	5.26	6.24
IV	2.17	4.2	8.5	2.8	2.7	3.2	5.9	5.7	4.25
V	6.8	4.8	7.7	3.6	7.5	8.6	2.6	10.1	6.5
VI	5.8	6.34	4.8	6.6	4.8	7.3	6.1	11.2	6.6
VII	0	0	0	0	0	4.3	3.6	0	1
VIII	10.9	10.2	10.1	4.3	1.8	8.3	11.3	2	7.1
Mean :	5.4	4.6	5	3.2	3.8	5.4	6.2	5.2	4.8

TABLE : 3 : Percentage of Inter-sex Guesses on the four criteria of Choice for boys and girls separately.

Criteria :	1		2		3		4		
	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls	
Group; VII	28.1	59.6	25	70	24.6	71	29.4	70	47.2
VI	20	35.1	23	50	22.1	26.3	23.4	39.3	30
VIII	27.9	72	43.1	72	44.1	55.1	59.2	74	56.6
Mean	27.3	55.6	30.4	64	30.2	50.8	37.3 _T	61.1	44.6

TABLE 4: Percentage of Inter-sex Guesses on the four criteria of Rejection for boys and girls of Groups VI-VIII.

the same as the proportion of inter-sex rejections (Table 4). There is a slight increase in the mean percentage of boys' guesses going to girls (31.3% as compared to 29.8% of the actual rejections) and a slight decrease in the proportion of the girls' negative guesses going to boys (57.8% as compared to 59.5% of the actual rejections). Though these variations are too small to be significant, they may nevertheless be suggestive of some degree of awareness on the part of the subjects.

The interpretation of these findings is far from simple. It should be realized that the proportion of inter-sex rejections, although very high, does not depart significantly from chance expectancy in either direction. In other words, the sociometric structure revealed by the negative aspects of our criteria could equally easily be obtained by a random distribution of rejections. This suspicion is further supported by a comparison of the amount of mutual choices and rejections as summarized in Tables 7 and 8.

C. MUTUALITY OF CHOICES AND REJECTIONS

While the percentage of mutual choices is always significantly larger* than its chance equivalent, the proportions of mutual rejections fail to reach such a level of significance. Mean percentage of mutual choices for all eight groups on all four criteria is 51.7%. The same for the last three groups, VI-VIII, amounts to 59.2% whereas their mean proportion of mutual rejections is only

the same as the proportion of inter-sex rejections (Table 4). There is a slight increase in the mean percentage of boys' guesses going to girls (31.3% as compared to 29.8% of the actual rejections) and a slight decrease in the proportion of the girls' negative guesses going to boys (57.8% as compared to 59.5% of the actual rejections). Though these variations are too small to be significant, they may nevertheless be suggestive of some degree of awareness on the part of the subjects.

The interpretation of these findings is far from simple. It should be realized that the proportion of inter-sex rejections, although very high, does not depart significantly from chance expectancy in either direction. In other words, the sociometric structure revealed by the negative aspects of our criteria could equally easily be obtained by a random distribution of rejections. This suspicion is further supported by a comparison of the amount of mutual choices and rejections as summarized in Tables 7 and 8.

C. MUTUALITY OF CHOICES AND REJECTIONS

■ N.B. : All statements regarding the statistical significance of the sociometric statistics in the following pages are based on the chance model prepared by Tagiuri, Bruner & Kogan, 1955, and the nomograph derived from it. For a fuller description of this, see Pp. 201 -205.

Criteria :	1		2		3		4		Mean
	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls	
Groups : I	56.5	53.3	37.5	46.7	50	58	47.6	50.8	50
II	52	59.7	54	58.3	56.3	59.7	58.3	66.7	58
III	41.6	44	29	35.3	46.8	46.4	48.9	50	42.7
IV	46	47	35.3	44.4	56.5	46	55.76	45	47
V	43	39	31.8	34.4	37.5	39	34	45	38
VI	64.4	40	54	40.5	59.5	37	47	24.7	46
VII	71.4	60	63.7	53.4	66.7	44.9	63	59	60.3
VIII	65	85	61.7	86	52.7	74	68.4	77.9	71.35
MEAN :	55	53.6	46	50	53.2	50.7	52.8	52.4	51.7

^{IV}
Table 7 : Percentages of Mutual Choices on the first four Criteria, I - IV, for the whole sample.

Criteria :	1		2		3		4		Mean
	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls	
Groups: VI	27.3	15.5	36.7	12	36.2	3.42	30	3.5	20.6
VII	43.5	6.8	29	8.9	42.6	7.8	28.6	9	22
VIII	35.6	21.6	18	22	29.3	22.9	22.6	8.7	22.6
MEAN :	35.4	14.6	28	14.3	36.4	11.4	27	7.1	21.7

^{IV}
Table 8 : Per Cents of Mutual Rejections on Criteria I - IV for Groups VI - VIII.

21.7%. There is no difference between boys and girls in terms of the mean percentage of mutual choices, both being 51.7%. But boys' mean percentage of mutual rejections, 31.7%, is significantly larger than the girls', 11.8%. One reason for this difference in the amount of mutual rejections may be looked for in girls' tendency to afford a disproportionate amount of their rejections to boys which, along with the boys' tendency to reject more of their own sex than the opposite sex, results in their not being reciprocated. The immediate implication of this observation is that the subjects of this study cannot be said to have the same degree of mutual awareness of each others' negative feelings as they have of each others' positive attractions. The consequences of this for the accuracy of sociometric perception will be further discussed in the next chapter.

By far the largest proportion of reciprocal choices is produced by the criterion of friendship, the grand mean of which is 60% (cf. Table^{IV}₉).

D. GENERALITY OF CHOICE STATUS OVER DIFFERENT CRITERIA

The consistency of sociometric status over different criteria of choice and/or rejection has often been used as an index of the reliability of the sociometric test (Mouton, Fruchter & Blake, 1956a). In our study this aspect is even more cogent because of its probable impact on the generality of the sociometric

Criteria : Friendship Similarity Leadership Popularity Unpopularity											
Groups:	I	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls
I		61.3	69.5	38.8	45.6	27.7	15.3	41.8	16.6	4	-
II		56.2	73.6	57.8	72.6	25	26.4	25	5.7	-	-
III		50	67.7	56	45.7	20	11.1	16.6	9.4	-	-
IV		46.7	56.6	35	46	22.7	28.2	19.1	12.7	-	-
V		31.8	62.3	16.2	54.5	10.4	31.1	20.9	21.7	-	-
VI		66.7	47.3	-	-	14	29.6	19	13.5	8.9	11.1
VII		76.3	50	-	-	42	33.3	34	25	11.7	17.8
VIII		71.4	76	-	-	50	70	68.9	28	35.7	8
Mean :		57.5	62.3	40.8	53	26.5	30.6	30.7	16.6	18.7	13.3
		60		47		28.5		23.6		16	

IV
Table 9 : Per Cents of Mutual Choices on the Criteria of Friendship, Similarity, Leadership, Popularity and Unpopularity.

perception as such. This generality has been investigated from two different angles: generality in terms of the total number of choices received and generality in terms of the different choosers. The first can be expressed by running correlation coefficients among the number of choices received by an individual on different criteria of choice. The second can be shown by calculating the proportion of different choosers on each criterion.

Below are the Phi coefficients of correlation between the four choice statuses as attained by the subjects of this study. With an $N = 259$, all these correlations are significant at .01

Choice Status on Criteria:		I	II	III	IV
Choice	I	-	.485 (.69)	.531 (.74)	.541 (.75)
Status	II		-	.452 (.67)	.474 (.69)
on	III			-	.566 (.78)
Criteria:	IV				-

level and much beyond. As is well known, Phi is always an under-estimation of Pearson's r and so the relatively small correlations obtained should not be taken lightly. As an indication of the real sizes of these correlations, tetrachoric equivalent of each Phi is given in parenthesis below it. Tetrachoric r is usually an over-estimation of the product moment r and thus the real values of these correlations must be taken to be somewhere between the two values obtained.

As is seen from the above table, choice status enjoys a high

degree of generality over different criteria. The highest degree of correlation is found between criterion III (to spend one's free time with) and criterion IV (to like most), and the lowest amount of correlation is between criterion II (to work with in a maths class) and criterion III. It seems that the more task-oriented and sociotelic a criterion the smaller the overlapping between it and other criteria. This is well in accord with the common-sense expectation.

The same degree of consistency is observed in the case of the rejection statuses of the last three groups over the four different criteria. The mean Phi correlations for the three

Rejection Status on Criteria:		I	II	III	IV
Rejection	I	-	.65	.71	.61
Status	II		-	.64	.59
on	III			-	.62
Criteria:	IV				-

groups are shown above. Compared against the correlations between the choice statuses of the whole sample these values of phi seem to be larger. But this is apparently due to the relatively low correlations produced by some of the first five groups for which rejection scores are not available. The mean phi correlations between the four choice statuses of the last three groups are presented below. As it appears, if anything, choice statuses

of these groups show more consistency than their rejection statuses. The differences, however, are too slight and inconsistent to be of any particular significance.

Criteria:	I	II	III	IV
I	-	.71	.70	.68
II		-	.58	.76
Criteria: III			-	.67
IV				-

Mean Phi Correlations between the Choice statuses of the last three groups on criteria I-IV.

E. THE CONGRUENCE BETWEEN CHOICES AND GUESSES

There appears to be a strong tendency among our subjects to guess those others as choosing them whom they have chosen themselves. The tendency has been observed by others as well. Tagiuri, Blake & Bruner (1953) have called the phenomenon perceptual congruency. The tendency seems to be quite spontaneous and conscious. Indeed one of the children in this study protested that there was no need to ask them to guess those who might have chosen them because they would guess the same people as they had chosen themselves.

Table^{IV}₅ summarizes the percentage of congruent guesses for the eight groups of this study. As it appears, the percentages of congruent guesses vary all the way from 51% (boys of group V

Criteria of

Choice : ' 1 ' 2 ' 3 ' 4 'Mean

		Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls	
Groups :	I	77	76	79	79	85	82	73	80	78.75
	II	84	72	89	72	86	84	89	80	82.25
	III	80	56	75	61	82	73	79	74	71.5
	IV	72	77	64	73	84	70	88	75	74.75
	V	75	61	51	62	85	69	71	59	65.75
	VI	73	63	70	67	81	74	76	72	71.75
	VII	95	80	86	75	97	65	94	81	85.50
	VIII	71	88	78	98	85	94	87	82	84.75
MEAN		78	72	74	73	86	76	82	75	76.87

Table^{IV} 5 : Percents of Congruent Guesses on the four Criteria of Choice, for Groups I - VIII.

Criteria of

Rejection: ' 1 ' 2 ' 3 ' 4 'Mean

		Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls	
Groups:	VI	48	50	52	59	50	53	66	37	51.75
	VII	74	51	59	62	79	69	80	72	68.25
	VIII	63	58	69	62	78	65	72	42	64.25
MEAN :		62	53	60	61	69	62	73	50	61.41

Table^{IV} 6 : Percentages of Congruent Guesses on the four Criteria of Rejection, for Groups VI - VIII.

on criterion II) to 98% (girls of group VIII on criterion II). The grand mean of all eight groups on all four criteria of choice is 77%. In other words, of every four guesses made over three guesses are afforded those who have been chosen by the subject. Boys tend to be more congruent than girls, their mean percentages being 80% and 74% respectively. Out of 32 cases, boys fare better than girls in 25 cases and girls fare higher than boys only in 7 cases. There is also some tendency for the more psychetelic criteria to produce higher proportions of congruent guesses. In this respect, criterion III, to spend one's free time with, comes first; then comes criterion IV, to like most, followed by criterion I, to work with in an English class, and last comes criterion II, to work with in a Maths class.

Coming to the proportion of congruency in guessing others' negative responses, Table^{IV}₆, we find the amount of congruency varying all the way from 37% (girls of group VI on criterion IV) to 80% (boys of group VII on criterion IV), the grand average for boys and girls over all criteria being 61%. This is significantly smaller than the proportion of congruent guesses on the criteria of choice. Almost in every case, the proportion of congruent guesses of rejection is 20% less than the proportion of the congruent guesses of choice. Here again, the boys average somewhat higher than the girls, 65.7% as compared to 56.7%. The tendency

for the proportion of congruency to decrease from more psychotelic to sociotelic criteria is also true of the guesses of one's rejection status. The only exception is that here the criterion of working together in a maths class produced more congruent guesses than the criterion of working together in an English class.

The main reason for the difference in the proportion of congruency between the positive and negative guesses and choices seems to lie in the fact that the subjects tend to attribute more rejections to the highly chosen individuals - whose rejection status is low - than to the highly rejected ones. In other words, our subjects appear to expect more rejections from the over-chosen members of their groups than the under-chosen ones. This is no doubt partly due to their realistic awareness of the situation and partly due to their self-enhancing perceptual defences. In any case, the tendency is bound to prejudice the accuracy of their perception. This will be dealt with in a later section.

F. SOCIOMETRIC PROPERTIES OF LEADERSHIP AND POPULARITY

In our description of the measures used to gauge the dimensions of leadership and popularity, we presented some evidence bearing on the argument that these two dimensions are different from the social status as measured by an ordinary sociometric question. The discussion here is hoped to highlight their

differences in terms of the sociometric properties described above, that is the proportion of inter-sex choices and mutuality.

Table^{IV}₁₀ shows the percentage of inter-sex choices on the criteria of leadership, popularity, friendship and similarity. A comparison of this table with table^V₁ reveals that while the percentage of inter-sex exchanges on the criteria of friendship and similarity are smaller than those on criteria I-IV, the proportion of inter-sex choices on the criteria of leadership and popularity, 17.7% and 21.6% respectively, are much higher than those on criteria I to IV. On both these criteria, girls have chosen more boys than boys have chosen girls. This is in contrast to the criteria of friendship and similarity where boys have chosen more girls than girls have chosen boys. Interestingly enough, girls have also chosen more boys (34%) than boys have chosen girls (25%) on the criterion of "least popular". Nevertheless, this percentage is much less than - just above half - the average proportion of girls' negative choices going to boys on the criteria I-IV (i.e. 59.5%, Table^V₃). These observations are suggestive that choices on the criteria of leadership, most popular and least popular, are not made on the same emotional grounds or assumed characteristics as those made on the first four criteria as well as the criteria of friendship and similarity.

Regarding the proportion of mutual choices, the criteria of

Criteria : Friendship Similarity Leadership Popularity Unpopularity

		Boys		Girls		Boys		Girls		Boys		Girls		Boys		Girls	
GROUPS:		I															
		2.3	5	8.3	7	11.1	36	6.9	45	-	-						
		10.4	6.9	8.8	2.4	18.3	12.6	20.8	30	-	-						
		9	0	6.5	1.4	25	34.7	27	25	-	-						
		6.7	6.2	0	6.1	18.2	18.8	25.5	36.6	-	-						
		11.4	3.2	5.4	5.4	12.5	22.9	13.9	26.7	-	-						
		3.6	3.9	-	-	17.7	19.7	20.1	20.1	11.9	33.3						
		0	0	-	-	8.8	15	3.8	17.8	37	34.8						
		12.5	4	-	-	6.9	2	6.6	20	26.8	34.3						
MEAN :		7	3.7	5.8	4.5	14.8	20.6	15.6	27.6	25.2	34						
		5.33		4.5		17.7		21.6		29.6							

Table^{IV} 10 : Per Cents of Inter-Sex Choices Exchanged on the Criteria of Leadership, Popularity, Unpopularity, Friendship and Similarity.

leadership and popularity produce much less mutuality than any of the other criteria, I-IV, friendship or similarity.* The mean percentage of reciprocal choices on the criteria of leadership, most popular and least popular being 28.5%, 23.6% and 16% respectively, they are significantly smaller than the smallest percentage of reciprocity produced by the criterion of similarity (47%). Even the proportion of mutuality on the criterion "least popular" is smaller than its equivalents on the negative versions of criteria I-IV. These findings seem to support the above conclusion that our subjects really did differentiate between their choices on the ordinary sociometric criteria and the criteria of leadership and popularity, and that the simple method employed in this study to measure these two aspects of group structure is justified.

* See Table ^{IV} 9.

2. ACCURACY OF SOCIAL PERCEPTION

A. INTRODUCTION

It will be remembered from the third chapter that our first measure of social perception proper was the amount of accuracy in predicting one's standing in the hierarchy of one's group as defined by the number of choices and (rejections) afforded one by other members of the group. A subject's accuracy score was determined by the number of people correctly guessed by him as choosing or rejecting him on a given criterion. This score was simply calculated by comparing a person's guesses with the actual choices he received and giving one mark for each correct guess.

As the number of guesses allowed was fixed at 4 (for the five groups of the first study) or 5 (for the three groups of the second study) the accuracy score could vary only from zero to four or five. As a consequence of this restriction, the accuracy score of an individual could not keep pace with his actual choice (or rejection) score. While the former could move only between 0 and d (the number of guesses allowed), the latter could - potentially at least - take any value from 0 to $N - 1$, that is, the number of the group less one. Thus, those who had been chosen by many people were not required to guess all their choosers and could not score more than those who had been chosen only by 4 or 5 people. On the other hand, as a person's accuracy was left at

the mercy of other people's choices, those who were unfortunate enough not to be chosen by anybody could score only zero. Hence the distribution curve of the accuracy scores was bound to be rectilinear only to a certain point determined by the size of d , the number of choices and guesses allowed on each criterion. As the number of choices received departed from zero, the actual feasibility of accuracy increased, reaching its maximum when the number of choices received reached d . A person who had received no choices could have no accurate guesses, hence his accuracy score would be zero; a person who received one choice could make one and only one accurate guess out of his four or five guesses and an individual who gained two choices was able to make but two accurate guesses and so on up to the point where the number of choices received equalled the number of guesses allowed. From this point on, the number of accurate guesses possible was the same for all subjects concerned, whether they obtained d , $d + 1$, $d + 2$ or ... $((N - 1))$, the largest amount of choice possible. It should be noted that we are discussing the physical possibility or the feasibility of the occurrence of various values of accuracy and not their probability of occurrence. This is quite a different matter which will be considered in connection with the relationship between choice status and accuracy. Figure IV1 gives a clear view of the ceiling of possibility imposed upon accuracy

score by the number of choices received and guesses allowed.

ACCURACY OF PERCEPTION

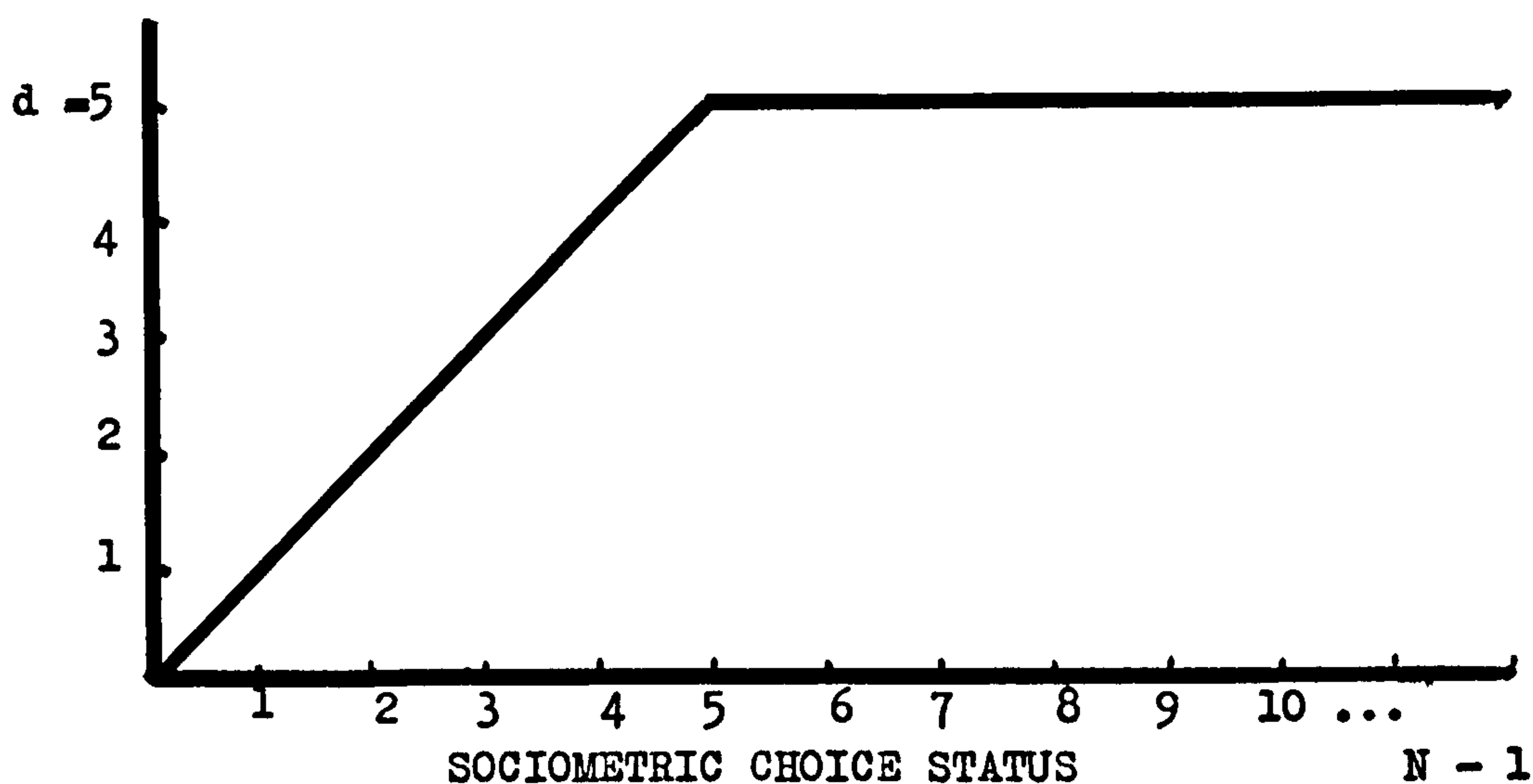


Fig. IV₁

Another consequence of this arbitrarily fixed number of forced guesses allowed was that it made no allowance for those individuals who, being aware of their unhappy position in the group, would venture no guesses. Indeed, there were quite a few people of this type among our groups who, despite our instructions, refused to make any guesses. We were well aware of these restrictions in the design of our questionnaire. Nevertheless, a number of considerations forced us to adopt it in spite of all these foreseeable limitations.

In the first place, we, like many other people, but contrary to Moreno's instructions, had limited the number of choices on

each criterion so as to make the handling of the results statistically manageable. There is some evidence that an unlimited number of choices not only does not increase the total amount of information obtained but tends, on average, to produce somewhat less than that gained by such a generous fixed - and forced - number of choices as allowed in this study (Evans, 1962). Moreover, as the perceptual or guessing aspect of our study seemed even remoter and less motivating than the ordinary choosing process, it was thought that leaving the number of guesses unfixed would greatly reduce the amount of information to be obtained. That this suspicion was not unfounded is borne out by our results: in almost every case the number of guesses made is less than the number of choices exchanged. This is even truer in the case of guessing negative feelings or rejections. Needless to say all these shortcomings and limitations in measuring accuracy of perception applied equally to the perception of negative feelings or rejections. Throughout this chapter the term 'choice' will be used to imply both positive choice and rejection. In the same manner, we shall speak of positive and negative guesses and accuracies. By positive guesses we shall mean the guesses concerning one's choice status and by negative guesses we shall refer to the guesses concerning one's rejection status in his group. By positive and negative accuracies we shall imply the degree of

correspondence between these two types of guesses and their choice counterparts respectively.

B. ACCURACY IN GUESSING OTHERS' POSITIVE RESPONSES

Table^{IV} 11 summarizes the percentage of accurate guesses made out of the total number of guesses attempted for each of our groups on the four criteria of choice. These criteria were:

- I. To work with in a group in an English class.
- II. To work with in a group in a Mathematics class.
- III. To spend one's free time with, and
- IV. To like most.

Under each criterion, the percentages of accuracy for boys and girls are given separately. It will be remembered that the negative aspects of these criteria were answered by only three of our groups. The percentages of accuracy on these negative aspects are given in Table^{IV} 12.

A perusal of Table^{IV} 11 will reveal that there is a good deal of variation in the percentage of accuracy over criteria and from group to group. For the eight groups together, the mean value of accuracy in guessing one's choice status over four different criteria is found to be 57.3% with a standard deviation of 8.87%. The mean percentages for individual groups range all the way from 45.5% (group V) to 72.7% (group VIII). The first question to be considered here is whether the observed percentage of accuracy

CRITERIA :		I		II		III		IV		MEAN
SEX		BOYS	GIRLS	BOYS	GIRLS	BOYS	GIRLS	BOYS	GIRLS	
GROUP :	I	73	48	51.5	49	54.5	58	51.5	59	55.6
	II	61	62.5	61	67	68	64	66	69.5	65
	III	42.5	50	40	49	52	48	54.5	56	49
	IV	54	50	42.5	47	59.5	52	68	55	53.4
	V	43	47	28	51	42.5	55	50	47.5	45.5
	VI	59	44	56	47	60	48.5	60	39.5	52
	VII	76.5	61	73	57	68	56.5	70	64	66
	VIII	53	84	64	91	63	83	70	74	73
MEAN :		58	56	52	57	58.5	58	61	58	57

TABLE IV 11 : Percentages of accurate guesses of choices on the four criteria of choice for the boys and girls of the eight groups separately.

CRITERIA :		I		II		III		IV		MEAN
SEX		BOYS	GIRLS	BOYS	GIRLS	BOYS	GIRLS	BOYS	GIRLS	
GROUP :	VI	27	21	32.5	13	30	12	83	4	21
	VII	46	15	24	15	43	9	25.5	9	24.5
	VIII	34	30	29	24	29	24.5	24	30	29
MEAN :		35	22	32	17	34	15	27	14	25

TABLE IV 12 : Percentages of accurate guesses on the four criteria of rejection for the boys and girls of groups VI -VIII.

can be expected to result from mere chance guessing or whether it denotes a real ability significantly beyond chance expectancy.

This question was first raised in connection with the sociometric test itself. Were the responses made on a sociometric test given off-hand and haphazardly and did the structure revealed signify nothing but the random occurrence of certain accidental patterns, or was it really indicative of a psychologically meaningful operation? It was to answer this question that Moreno & Jennings (1938) carried out their experimental study on the statistics of social configurations. In this study they matched their findings on a sociometric test against the chance expectancies derived from a Monte Carlo model as well as a mathematical probability model provided by Lazarsfeld. Bronfenbrenner's (1944-1945) study was another attempt to furnish the sociometric technique with a probabilistic frame of reference with mathematically defined formulae for any and every possible form of sociometric structure. Since the appearance of Tagiuri's work on relational analysis in 1952, the need for another probabilistic model capable of providing the various chance expectancies of diadic interaction situations has risen again. Earlier workers in this field had recourse to empirical roulette-type chance models (e.g. Tagiuri, 1952). In 1955, Tagiuri, Bruner and Kogan worked out a special chance model with a simple nomograph which

is designed to provide the chance expectancy of any dyadic relationship.

To the designers of this model, a dyad is the "form of relationship that exists between a pair of group members in terms of whether they like each other and perceive each other as liking in return". The chance model chosen corresponds to the case where the subjects are regarded as automatic robots allowing their selections at random. The main underlying assumptions are that the different choices and guesses made by any individual are independent of each other; that the choices and guesses of any individual are independent of those made by any other individual; and that no subject may choose or guess the same person more than once. If the choices and guesses making up a dyad be thought of as bonds, it can be seen that dyads can have 0, 1, 2, 3 or 4 such bonds joining their members. The general formula employed to generate the chance expectancy of a dyad form when choices and guesses are both fixed to a value d is:

$$E = \frac{N(N-1)}{2} (P(C_i)P(G_i)P(C_j)P(G_j)) \quad \text{where}$$

N = the number of subjects in the group;

$P(C_i)$ = the probability of subject i (S_i) choosing or omitting subject j (S_j), these probabilities being $d/(N-1)$ and $N-1-d/(N-1)$ respectively;

$P(G_i)$ = the probability of S_i guessing or not guessing S_j , these probabilities being $d/N-1$ and $N-1-d/N-1$;

$P(C_j)$ and $P(G_j)$ are the probabilities of S_j choosing or omitting and guessing or not guessing S_i , these probabilities being $d/N-1$ and $N-1-d/N-1$ respectively.

The variance of E is : $VE = E\left\{1 - \frac{2d}{N(N-1)}\right\}$.

In the case in which choices and guesses are both fixed to a value d there can be only five different values of E , the chance expectancy of the dyad, and these values are a function of the number of bonds in the dyad which can range only from 0 to 4. It is apparent from the formula of E that the expected frequency of a certain diad with a given number of bonds is a function of d and N , that is the number of choices and guesses allowed and the number of subjects in the group. Indeed, under the conditions specified above, it is the ratio of d to $N-1$ that entirely determines the chance of obtaining dyads with 0, 1, 2, 3, and 4 bonds. This property of E as a function of $\frac{d}{N-1}$ when the number of bonds is specified permits the construction of a nomograph that can be applied to any value of $d/N-1$ and thus obviates the necessity of using the above formula for finding E . This nomograph consists of five curves, corresponding to the five classes of dyads with 0, 1, 2, 3, and 4 bonds. The ordinate of the nomograph gives the percentages of all possible dyadic relations corresponding to the ratio $d/N-1$ represented on the abscissa. To obtain the chance expectancies of any single dyad one must first decide how many bonds the dyad has. The percentage value

of this number of bonds can be read from its appropriate curve in the nomograph, entering the graph at the $d/N - 1$ point. This value must be divided by '1', '2', '3', or '6' depending upon the number of bonds and the symmetricality or asymmetricality of the dyad.

In terms of diadic relations - as defined above - accuracy of guessing is achieved in the following cases:

1. When A chooses B and B guesses A.
2. When B chooses A and A guesses B.
3. When A chooses and guesses B and B guesses A.
4. When B chooses and guesses A and A guesses B.
5. When A chooses and guesses B and B chooses A.
6. When B chooses and guesses A and A chooses B.
7. When A and B both choose and guess each other.

Thus the amount of accurate guessing expected on chance grounds alone equals the sum of the chance expectancies of the occurrence of these "2", "3", and "4" bond relations in a group. However, as there are four other types of two-bond relations which do not result in accuracy, the expectancies of two-bond relations must be multiplied in $2/6$ to give the exact value of accuracy ensuing from two-bond relations.

For our first five groups the size of N ranged from 32 to 35 and d, the number of choices and guesses allowed, was 4. The values of $d/N - 1$ were $4/32 - 1 = .129$, $4/32 - 1 = .129$, $4/35 - 1 =$

.118, $4/34 - 1 = .121$ and $4/35 - 1 = .118$ for groups I, II, III, IV and V respectively. Entering the nomograph with .129 - the highest value of $d/N - 1$ in our study - we find the percentage of all two-bond relations (out of $N(N-1)/2$ possible dyadic relations) to be about 8%. Since there are six types of two-bond dyads and only two of them (numbers 1 and 2 above) lead to accurate guessing this percentage must be multiplied by $2/6$ to give the chance expectancy of the two-bond dyads resulting in accuracy. This leaves us with about 3%. To this we must add about 2% of accuracy expected on the basis of three-bond relations. The chance expectancy of a four-bond relation is almost nil for our value of $d/N - 1$. Thus for our largest value of $d/N - 1$ when $d = 4$ the chance expectancy of accuracy generating dyadic relations does not exceed five per cent of the value of $N(N-1)/2$, the number of all dyadic relations. As the percentages of accurate guesses in Table^{IV} II are based on the number of guesses made and not on the value of $N(N-1)/2$, this value of E must be converted into a percentage of $N(d)$ - the total number of guesses possible - to make it comparable to the values of our table. This done, it appears that only 25 out of the whole 128 possible guesses ($= 32 \times 4$) by the subjects of groups I and II can be expected by chance to enter into dyadic relations resulting in accurate guessing. This amounts to just under 20% of their guesses and falls significantly

(at .01 level and much beyond) short of our lowest observed percentage (48%) for these two groups. In all other cases but one (group V, criterion II, boys) our observed percentages are at least twice that expected on pure chance basis and are highly significant. The chance expectancy of this single case is found to be 17% and although our observed value (28%) is 11% greater, the χ^2 (= 3.4) does not reach the .05 level of significance and falls somewhere between .10 and .05. But the combined percentages of accuracy for boys and girls of the group on this criterion (= 41%) is highly significant ($p < .01$)

In the case of the last three groups (i.e. groups VI, VII and VIII), where five choices and guesses were allowed, the ratio $d/N - 1$ was $5/37 - 1 = .14$, $5/30 - 1 = .17$ and $5/25 - 1 = .21$ respectively. The chance expectancies of accurate guesses for these values of $d/N - 1$ are found to be 17%, 18% and 19% respectively. Going back to Table ^{IV} 11, we find that in all three groups observed, percentages of accuracy exceed twice their expected values. Even the smallest percentages, that is 39.5 of group VI girls on criterion IV, is larger than its chance expectancy at beyond .01 level (χ^2 larger than 20). The mean accuracy for these three groups was 63.3%.

There thus remains no doubt that our eight groups have made their guesses significantly better than what might have been

expected on pure chance basis. Out of 64 cases of guessing one's positive choice status in the group, 63 cases differ from their chance expectancies at .01 level and beyond and only one case falls slightly short of .05 level. In general an average of five or six of every ten guesses are correct. This is more significant in view of the difficulties besetting the outcome of guessing. As was stated above, the accuracy of an individual depends on the responses of other individuals. If some of these others happen to be absent or for one reason or another abstain from choosing, the accuracy of the other individuals will suffer. For example, the low percentage of accuracy observed in group V can be accounted for by the simple fact that about one fifth of the members of this group were absent on the day of testing. There is also the possibility that some subjects may wilfully play tricks with their choices and so vitiate the predictions of others.

Table^{IV} 11 gives the percentage of accuracy attained by each group on each criterion and for boys and girls separately. The highest percentage of accuracy (i.e. 91.3%) is achieved by the girls of group VIII on the criterion of working together in a group in a Maths class. The lowest percentage of accuracy (28.2%) is that of boys of group V on the same criterion as above. These two extremes of accuracy suffice to indicate the range within which the accuracy scores varied. The variance was even

greater for individual cases where the amount of accuracy ranged all the way from zero (no accurate guessing) to 4 or 5 - one hundred per cent accuracy.

Part of the increased accuracy of the last three groups (VI, VII, and VIII) is due to the increased probability of accuracy contingent upon the increased value of d . But the amount of increase in their average percentage of accuracy is much greater than what might be expected by chance alone. Moreover, no increase is seen in the case of group VI, the mean percentage of accuracy for which (51.8%) is even smaller than that of the first five groups (53.7%). The main reason for the increased accuracy of the last two groups (VII, VIII) must be sought in the sociometric structure of these groups.

C. ACCURACY IN GUESSING OTHERS' NEGATIVE RESPONSES

Considering the predictions of one's rejection status in the group as determined by the other group members' negative responses (Table^{IV} 12), we find the mean percentage of accuracy for the three groups VI - VIII to be 24.8%. This is less than half the mean percentage of accuracy attained in guessing one's choice status. Of twelve cases recorded in Table 12, only two cases of boys' predictions (group VII, criteria I and III) exceed their chance expectancies at .01 level or beyond. The rest of these percentages fall short of .05 level of significance. This is

well in line with the findings of other studies. Tagiuri (1958), summarizing the findings of his studies, concludes:

"In nearly every group, identification of those who choose us is more accurate than chance. For rejections, however, accuracy significantly exceeds expected values when data from all groups are combined, but one cannot count on the difference reaching significance in specific groups." (p.325)

This last conclusion does not agree with our findings. As is seen from Table 12, some of the boys' groups reach significant levels of accuracy, but the combined percentages of all groups - boys and girls - fall much below the level of significance.

The failure of the perception of the negative feelings of others to correspond with the objective phenomenon presents a somewhat conflicting situation. In the first place one would expect that concern over rejection - or 'affiliative anxiety', as Tagiuri, Blake and Bruner (1953) have called it - would lead to accuracy in spotting others' negative feelings. From what we know of the operation of anxiety as a drive, we should expect a high degree of accurate guessing in the face of the negative responses of others. If others' negative feelings toward ourselves are of any significance to us - and we have a good deal of evidence to believe that they are - the threatening situation presented by such negative feelings should make us more sensitive and responsive

to them and as such should enhance our degree and accuracy of awareness of such feelings on the part of our associates. Evidence from the general field of social perception - i.e., the social determination of perception - supports this expectation. For instance, Bruner (1950), reviewing the work done by himself and his collaborators, concludes that "... under the pressure of threatening stimuli, the organism shifts from defensive avoidance of stimuli and becomes vigilant and perceptually selective toward that which threatens". (Bruner, 1950, p.122)

The failure of our subjects to bear out this expectancy can be explained on several grounds. On the one hand, it can be assumed that one's underlying negative interpersonal feelings are too subtle and intricate to be observed as easily as the cues underlying positive interpersonal feelings. This assumption is lent support by the almost universal tendency in human societies to put a premium on the successful concealment of negative feelings in the interests of harmonious interpersonal relations. Because of their disruptive effects on the peaceful course of social life and because of the danger of open conflict and aggression contingent upon them, negative feelings are generally discouraged by human societies and their expression usually entails one form or other of social censure. Throughout the process of socialization, concealment of these socially undesirable feelings becomes

a virtue in itself and highly rewarding - both socially and personally - to the individual. Hence the difficulty in discerning and predicting negative feelings.

On the other hand, it is well in line with the known facts of general psychology, that the perception of these negative aspects of others' behaviour may be actively resisted and/or distorted by the operation of the so-called "perceptual-defence" mechanism (Brown, 1961). If an individual finds it difficult to perceive a word which is contrary to his established values and gets around it by unconsciously distorting his sense-data (Postman, Bruner and McGinnies, 1948), it is no wonder that he should use the same mechanism against the perception of such disturbing stimuli as the negative feelings of others towards himself. After all, one's value system is but one part of one's self-system. Obviously, the effect of this subjective tendency on the part of the perceiver can be greatly enhanced by the operation of the aforementioned tendency to conceal one's negative feelings on the part of the object of perception. The perceiver is further handicapped by the fact that it is usually personally disquieting and socially undesirable to attribute negative feelings to one's fellow human creatures. "Thou shalt not impute negative feelings to thy fellow human beings", because this will reinforce your already suspected negative feelings - and reactions - towards them and may result in open hostility and aggression.

These three factors together can account for the failure of most people to predict others' negative feelings accurately. Above and beyond these more obvious explanations, the fact should not be overlooked that negative feelings may not be as genuine and naturally human as positive affective feelings. If influences like man's prolonged period of childhood and his relative weakness to withstand the hazards of wild life alone have made it imperative for him to throw his lot in with other people and, in due course, end up with an irresistibly strong "instinct of herd", or - in more modern jargon - an "affiliative need (n Affiliation)", (Murray, 1938), there is no ground to believe that his social-biological development should have produced a comparable anti-social instinct of hate or isolation. Thus to put choice against rejection or affective feelings against negative feelings seems to be more of a linguistic confusion than a psychological reality. If I prefer to spend my weekend with friend A, it does not necessarily mean that I do not like friends B, C, D, etc., except in those rare cases when I may have had a recent quarrel with them. The fact is that I do not like to spend my weekend alone (if only because the honourable sociometrist has asked me not to do so). My whole life and upbringing make me crave for the company of somebody, and friend A, because of some illusions on my part as to his potential capabilities as a weekend companion, tops my list of

desired companions. This being so, it is no wonder if I find myself at a loss when faced with the irresistible question "Whom would you least like to spend your weekend with?" - a genuine case of Krech's (1951) "measuring what is not there". If finding out my own response is so difficult then guessing other people's responses - and these towards my own long-cherished self - should prove doubly difficult.

This quality of the negative choice-guess process gives their distribution an outstandingly distinctive character which can account for the larger part of the observed lack of accuracy. Compared with the distribution of positive choices, the distribution of negative choice scores is marked by three distinctive characteristics; these are: 1) The percentages of inter-sex rejections are much higher than those of inter-sex choices;

2) The percentages of mutual rejections are significantly less than those of mutual choices;

and 3) The number of "isolates" and "under-rejected" - if the terminology of choices can be applied to rejections - are much in excess of the number of under-chosen or isolates. This leads to a more skewed distribution curve and a much lower median. As a logical consequence of this situation, a small proportion of subjects receive the larger part of the total amount of negative choices exchanged and the rest who receive

much less than the number of guesses allowed (five in this study) are physically bound to be wrong in over half their guesses. On the other hand, the restriction placed on the number of guesses prevents the over-rejected members from making more guesses and thus contributing to the total amount of accuracy. But, it must be admitted, few of our over-rejected subjects make all their allotted guesses accurately. This lends further support to our above contention that negative choices are made more or less on a chance basis. This point is further supported by the fact that both the amount of inter-sex rejections and the amount of mutual rejections, although significantly different from their choice counterparts, do not deviate from their chance expectancies at any level of significance. Thus the failure of our subjects to predict others' negative responses accurately, can be as much blamed on their subjective and unconscious distortion of the reality as on the objective phenomenological characteristics of the field of negative feelings itself.

D. SEX DIFFERENCES IN THE ACCURACY OF PERCEIVING ONE'S POSITIVE AND NEGATIVE CHOICE STATUS

Table^{IV} 11 shows some difference between the mean percentages of accuracy of girls and boys over individual criteria. But there appears to be no consistent trend and the mean percentages of the two sexes over all groups and all criteria are virtually the same (57.4% for boys and 57.3% for girls). Taking into account only

the number of cases regardless of the size of difference, it is also found that out of the 32 cases, girls surpass boys in 16 cases and boys surpass girls in 16 cases. Thus our study does not lend any support to women's proverbial superiority in social perception.

In the case of perceiving others' negative responses, the girls' percentages of accuracy lag much behind those of the boys (Table^{IV} 12). The combined mean percentages of accuracy for boys of the three groups is 32% whereas that of girls is only 17%. In all three groups and over all four criteria, the girls' percentage of accurate guesses are smaller than those of the boys. This finding runs counter to the established view regarding girls' superior ability in perceiving others in general (Allport, 1937, 1960) and in perceiving their sociometric status (Ausubel and Schiff, 1955). A plausible explanation for this negative result seems to be provided by the amount of rejections exchanged between boys and girls (See Table^{IV} 32). As is seen in Table^{IV} 3, the percentage of girls' rejections going to boys is over twice that of boys' rejections going to girls. In view of the close relationship between choosing-rejecting others and guessing them as choosing or rejecting oneself, the percentage of girls' negative guesses going to boys is also much larger than that of boys. The mean percentage of girls' rejections going to boys is 59.5% and

the mean percentage of boys' rejections going to girls is 29.8%. The perceptual equivalents of these values are 57.8% and 31.3% respectively. This means that over half the rejections of girls going to boys cannot be reciprocated and their corresponding guesses are physically bound to be wrong. Moreover, for reasons discussed earlier, the amount of mutual rejections does not exceed its chance expectancy and thus puts a severe restriction on the degree of accuracy to be expected. This is more severe in the case of girls' mutual rejections which form only 12% of their total rejections and fall much behind that of boys (31.7%).

Some studies have found differences between boys and girls in predicting the responses of their own sexes and their opposite sexes (Ausubel and Schiff, 1955; Bronfenbrenner, Harding and Gallway, 1958). The very low amount of inter-sex choices and guesses and the more or less haphazard way in which inter-sex rejections and guesses of rejections are allocated have made our technique insensitive to such subtle differences as the sex of the perceived and the perceiver. Almost 98% of the accuracy in guessing one's choice status is accounted for by the same-sex choices and guesses. This is not surprising in view of the fact that the mean percentage of inter-sex choices was only 9.5% and that of inter-sex guesses just under 5%. Turning to the prediction of one's rejection status, it is found that an average of

about 35% of the accuracy is accounted for by the accuracy in predicting inter-sex rejections. Calculated for girls and boys separately, this value is found to be 48.5% (for girls) and 22% (for boys). However, as Table^{IV}₁₄ indicates, this percentage varies greatly from one group to the other and in each group from one criterion to the next. These findings are more suggestive of the sociometric structure of the inter-sex rejections than any differential ability.

E. INTER-CRITERION DIFFERENCES IN ACCURACY

As Tables^{IV}₁₁ and^{IV}₁₂ show, there is a good deal of variation in the percentage of accurate guessing over our four criteria of choice and rejection. To make these differences more apparent, we have summarized the mean percentages of the whole group over different criteria in Table^{IV}₁₃. The table consists of three separate sections. The first section from the top represents the average percentages of accuracy in guessing one's choice status for the last three groups of our study and the bottom section gives the mean percentage of accuracy of the last three groups in guessing their rejection status. The table indicates a tendency for the percentage of accuracy to increase from criterion II to criterion IV. This tendency is quite apparent and regular in the case of the first five groups. The more task-oriented the criterion of choice, the smaller the percentage of accurate

CRITERIA :	I	II	III	IV	MEAN
BOYS:	55	45	55.5	58	53
GROUPS I-V :					
GIRLS :	51.5	52.5	55.5	57	54
MEAN FOR BOYS & GIRLS :	53	48.5	55.5	58	54
BOYS:	63	64.5	64	64	64
GROUPS VI-VIII:					
(CHOICES)					
GIRLS:	63	65	63	62.5	62.5
MEAN FOR BOYS & GIRLS:	63	65	63	63.5	63.5
BOYS:	35.5	32	34	27.5	32
GROUPS VI-VIII:					
(REJECTIONS)					
GIRLS:	22	17	15	14	17
MEAN FOR BOYS & GIRLS:	28.5	25	24.5	21	25

TABLE II : Mean Per Centa of Accuracy Arranged According to the
 V/13 Criteria of Choice or Rejection and for Boys an Girls
 of the two Studion Separately.

CRITERIA :	I		II		III		IV		
SEX :	B	G	B	G	B	G	B	G	
GROUP VI	15	13	5	33	0	0	14	0	10
VII	19	29	21	43	15	50	15	75	33
VIII	50	80	47	100	29	75	46	87	64
MEAN :	28	41	24	59	15	42	25	54	36

TABLE III : Percent of Accurate Guesses of Rejections
 V/14 Exchanged between Boys and Girls.

guessings and vice versa. Thus, for the boys and girls of the whole study, the smallest percentage of accuracy (54.6%) is achieved on criterion II, "to work together in a mathematics class"; the next smallest percentage (56.8%) is on criterion I, "to work with in an English class"; the next smallest percentage (58.3%) is on criterion III, "to spend one's free time with", and the largest percentage of accuracy (59.5%) is achieved on criterion IV, "to like most". This pattern is also true of the boys and the combined boys and girls of the first five groups. The mean percentages of the girls of these groups on criterion I is smaller than their percentage of accuracy on criterion II but the remaining two criteria follow the pattern. The agreement between boys and girls of the eight groups on this point is indicated by a Kendall Coefficient of Concordance (W) of .7. For the first five groups alone, the value of W is .9. However, none of these two values of W reach any significance level because of the small number of ranks involved (Siegel, 1956). The differences between the percentages of accuracy on different criteria are also too small to be significant at any level.

Turning to the percentages of accuracy in predicting one's rejection status (Table^{IV}.12 and Table^{IV}.13, bottom section) we find the reverse of the above tendency. Here the amount of accuracy decreases from criterion I to IV. The trend is more regular and

prominent in the case of girls. The agreement between boys and girls is represented by a Kendal Coefficient of Concordance of .915 which is insignificant because of the small number of ranks involved. Here again the amount of difference is too small to be significant. Nevertheless, the observed trend suggests that our subjects find it easier to predict their rejection status on the so-called socio-telic criteria than on psyche-telic criteria.

As a tentative explanation for this contradictory trend, it may be stipulated that negative choices and guesses, being less genuine and less deep rooted, are more affected by task-relevant considerations, hence the observed tendency of the task-orientated criteria to produce more accurate predictions. Besides, it is possible that subjective processes which vitiate the outcome of guessing one's rejection status are more likely to operate in such general and ego-involving criteria as liking and disliking than in more specific and task-oriented criteria of working together. On the other hand, the highly significant correlations found between one's choice status on various criteria (Mouton, Blake and Fruchter, 1956b) indicates that people tend to choose others far more for their general appeal than for such reasons as may be implied by the given criterion of choice (Riecken and Homans, 1954). But when asked to guess those who may have chosen them they tend to pay more attention to the requirements of the

individual criteria of choice. This tendency is bound to lead to some degree of discrepancy between one's choices and guesses on such specific criteria and consequently result in lowered accuracy. But no such discrepancy should occur between one's choices and guesses on psychotelic criteria of a general affective nature.

F. TYPES OF ACCURACY

In the last section, it was demonstrated that a very close relationship existed between the processes of choosing-rejecting and their perceptual counterparts. Most of the guesses went to the same people whom the subject had chosen or rejected on the given criteria. Following Tagiuri, Blake and Bruner (1953), we called this tendency perceptual affective congruency or simply congruency. There it was also suggested that congruency, along with the other general tendency of reciprocal choice or rejection, accounted for the lion's share of our observed accuracy. Indeed, whenever there is mutuality of choice or rejection and congruency, accuracy is inevitable. If subject A chooses subject B and guesses that he will in turn be chosen by subject B, and subject B in fact chooses him, subject A's guess cannot be but accurate.

Table ^{IV} 15 presents the percentage of congruent and non-congruent accurate guesses for our eight groups. The accuracies of negative guesses (rejections) are given separately in the bottom

Criteria of Choice	I				II				III				IV			
Type of Accuracy	Congru.		Noncon.		Congru.		Noncon.		Congru.		Noncon.		Congru.		Noncon.	
Sex	B	G	B	G	B	G	B	G	B	G	B	G	B	G	B	G
GROUP: I	86	96	14	3	76	86	23	14	94	97	5	3	76	90	3	10
II	93	82	7	18	93	83	7	17	90	87	10	13	96	86	3	14
III	90	77	10	22	75	61	25	39	87	89	13	12	87	84	12	16
IV	84	91	16	8	75	82	25	18	91	87	9	13	96	86	4	14
V	89	76	10	24	64	57	36	43	88	72	12	28	79	75	21	25
VI	92	77	8	23	78	68	21	31	92	67	8	33	79	61	20	39
VII	96	93	4	6	89	76	11	24	97	61	2	38	97	93	2	7
VIII	93	100	7	0	92	100	8	0	82	100	18	0	95	94	5	6
Sum of I-VIII/8	90	87	9	13	80	77	20	23	90	82	10	18	88	81	12	19
REJECTIONS																
VI	60	40	40	60	60	56	40	44	77	14	22	86	76	0	24	100
VII	81	57	19	43	53	57	47	43	85	100	15	0	92	75	8	25
VIII	65	67	35	33	82	67	18	33	88	67	12	33	62	27	38	73
MEAN OF VI-VIII	69	54	31	45	65	60	35	40	83	60	16	40	76	34	23	66

TABLE 15: PER CENT OF CONGRUENT AND NONCONGRUENT ACCURATE GUESSES ON
DIFFERENT CRITERIA OF CHOICE AND REJECTION.

part of the table. A perusal of this table reveals that a very large proportion of observed accuracy in guessing one's choice status is accompanied by congruency. This proportion varies all the way from 100% (group VIII girls on criteria I, II and III) to 57.14% (group V girls on criterion II). The mean congruent accuracy over all groups and criteria is found to be 87.2% for boys and 80.8% for girls. Percentages of non-congruent accurate guesses are seen to vary from 0 to 42.8% with a mean of 12.7% for boys and 19.1% for girls. Thus there seems to be a slight tendency for boys to achieve more congruent accuracies than girls. But the difference between the two sexes is not large enough to be significant at any accepted level.

Turning to the accuracy in guessing one's rejection status, it is found that the percentage of congruent accuracy varies all the way from 100% (group VII girls on criterion III) to zero per cent (group VI girls on criterion IV). The mean of the boys' congruent accuracies is 73.4% and that of the girls is 52% and the difference is significant at above .05 level. The same is true of the difference between the boys' mean percentage of non-congruent accuracies (26.5%) and the girls' mean percentage of non-congruent accuracies (48%). In both cases of positive and negative accuracies, girls' percentages of congruent and non-congruent accuracies reflect a much larger variance than those of boys.

The division of accuracy into two types of congruent and non-congruent is proposed to further illuminate the interaction between the different processes involved and should not be taken very seriously. There is no reason to believe that the two kinds of accuracy differ from each other in any meaningful respect. In terms of the diadic analysis discussed in connection with our chance-expectancy model, congruent accuracy is a product of three and four bond diadic relations whereas non-congruent accuracy can result only of asymmetrical two-bond relations. The over-chance occurrence of congruent accuracy in our study is another sign that our subjects did really differ from robots in allocating their choices and guesses. The reverse is true of the accuracy in guessing one's rejection status where neither the proportion of congruent guesses nor the percentage of accurate guesses reach a significant level. That congruency by itself does not lead to accuracy is well demonstrated by the fact that in every case the number of congruent guesses is larger than the number of accurate congruency. Thus congruency as a perceptual tendency or set contributes both to accuracy and non-accuracy of perception. The decisive factor seems to lie in the dynamic structure of the sociometric situation in which choosing and guessing are carried out. Both processes, however, are heavily influenced by the choosers' expectations, projections and other autistic processes.

G. GENERALITY OF ACCURACY OVER DIFFERENT CRITERIA

Do people exhibit the same degree of accuracy in predicting their choice and rejection status regardless of the criterion of choice or rejection employed? To answer this question phi coefficients of correlation were calculated between the accuracy scores of each individual on the four criteria of choice and rejection. These coefficients are summarized in Table^{IV} 16. It is seen there that about 30 of the 48 correlation coefficients between the four accuracy scores of our eight groups are significant at .01 level and above; of the remaining 18 coefficients, 11 are significant between .05 and .01 and only 7 fail to reach an accepted level of significance. On the other hand, out of the 18 coefficients of correlation between the accuracy scores of our last three groups in predicting their rejection status, only 4 are significant at .01 level and 4 others at .05 level. Thus, over 85% of our observed correlations between positive accuracy scores are significant at .05 level and much beyond, whereas only about 44% of the negative accuracy scores show such significant correlations. The sizes of the correlations are also very considerable and suggestive of some difference between the two kinds of positive and negative accuracy scores. In the case of positive accuracy scores, the median is above .52, whereas the median of negative accuracy correlations falls just under .37. Considering the nature of the phi, which is an underestimate of the

TABLE^{IV} 16 : Correlations between Accuracy of Perception on Different Criteria of Choice and Rejection.

CRITERIA OF CHOICE :

		I - II	I - III	I -IV	II -III	II- IV	III-IV
GROUPS :	I	<u>.46</u>	<u>.60</u>	<u>.53</u>	<u>.46</u>	.26	<u>.39</u>
	II	.34	<u>.68</u>	<u>.55</u>	<u>.49</u>	.33	<u>.55</u>
	III	<u>.46</u>	.33	<u>.61</u>	<u>.37</u>	<u>.41</u>	<u>.40</u>
	IV	<u>.52</u>	<u>.52</u>	<u>.55</u>	<u>.46</u>	<u>.48</u>	<u>.61</u>
	V	<u>.61</u>	<u>.51</u>	<u>.67</u>	<u>.48</u>	<u>.59</u>	<u>.83</u>
	VI	<u>.58</u>	<u>.49</u>	<u>.70</u>	.28	<u>.65</u>	.29
	VII	<u>.66</u>	<u>.55</u>	.37	<u>.48</u>	<u>.45</u>	<u>.51</u>
	VIII	<u>.82</u>	<u>.62</u>	<u>.65</u>	<u>.65</u>	<u>.82</u>	<u>.82</u>

CRITERIA OF REJECTION :

		I -II	I -III	I -IV	II-III	II-IV	III-IV
GROUPS :	VI	<u>.86</u>	<u>.41</u>	.24	<u>.47</u>	.29	<u>.46</u>
	VII	.18	<u>.41</u>	.31	.34	.37	<u>.41</u>
	VIII	.26	.16	<u>.47</u>	<u>.72</u>	.17	.02

Pearson product moment correlation coefficient, the sizes of the observed correlations - particularly those between positive accuracy scores - are very notable indeed.

The interpretation of these correlations is not as simple as it might seem at first. Some people have taken these correlations as indicative of a general ability. In view of the high correlations found between the subjects' choice status over different criteria and the relationship between choice status and accuracy of guessing, these correlations can easily be explained in terms of the sociometric structure of the group and the general response sets operative in the process of choosing and guessing. As evidence in support of this interpretation it should be noted that there was only a slight negative correlation between the two kinds of accuracy. These correlations, however, were too small to be of any significance. They ranged all the way from .007 to $-.38$ with a median of about $-.20$. This is not surprising in view of the slightly negative relationship between positive and negative choice status and the restrictions placed on accuracy by our design of experiment. Because of the generally observed tendency for over-chosen individuals to be under-rejected and vice versa, and the high relationship, both physical and probabilistic, between choice or rejection status and accuracy, a negative relationship between the two kinds of accuracy

scores is inevitable. What prevents this negative correlation from becoming large enough to be significant is the formerly observed sociometric effect of increased inter-sex rejections which by distributing the negative choices at random among the members of the opposite sex tends to lower the negative correlation between choice and rejection status.

H. SOCIAL PERCEPTION IN TERMS OF PREDICTING OTHERS' RESPONSES ON THE GUESS WHO TEST

As was stated in the previous chapter, the Guess Who Test was readministered with new instructions asking the subjects to guess on which items their names had been mentioned by their classmates as well as those who had mentioned them on each item. In this manner, two measures of social perception were obtained, one based on the subjects' awareness of how - in terms of the G.W.T. - their classmates viewed them and the other based on their awareness of the way specific individuals among their classmates saw them.

At the outset, it should be admitted that our measures of social perception were very crude and subject to many restrictions. In the first place, they were beset by all the difficulties discussed in connection with the sociometric perception per se. But the subjects were left free as to the number of items on which they would make a guess as well as the number of people they would guess. However, the upper limit of this number was set at 5.

This arrangement was regarded as necessary to avoid collecting arbitrary responses. But it created its own problem by reducing the number of guesses or losing information which might have been obtained by a fixed number of choices. The most damaging effect from the point of view of the accuracy of guessing resulted from the unexpected fact that a considerable number of pupils were absent on the day of testing and this resulted in a large amount of guesses being discarded because their accuracy or lack of accuracy could not be decided. Another vitiating influence arose from the inherent nature of the G.W.T. It is easy to understand that what the subjects were required to do was to nominate a number - ranging from $1/5$ to $1/7$ - of their group members they regarded as most outstanding on the given description. The emerging distribution curve was thus bound to be highly skewed. On such a skewed distribution, the chance - both probabilistic and physical - of over-chosen individuals being accurate is increased at the expense of the under-chosen subjects. A logical consequence of this situation is that we should not expect to find generality of accuracy over different items of the test. Nor should we expect a comparable accuracy score for individual subjects on every item as they are not required to make guesses on every item. The only comparable value is the mean percentage of accurate guessing over all items. But this total percentage of accuracy cannot be

regarded as entirely comparable because of the differences between different items as to the facility or difficulty of guessing.

Table^V 17 (part C) summarizes the amount of accurate guessing on each item as a percentage of the total number of guesses attempted. It is clear from the table that the percentage of accuracy varies greatly from one item to the next, ranging all the way from 64.5% (group VIII, item 4) to zero per cent (group VI, item 14). The amount of accuracy tends to be greater on some items for all three groups and smaller on others. If the percentage of accuracy on each item is pooled for the three groups and rank ordered and the percentage of each individual group on each item is also ranked, very high and significant correlations are found between the ranks of each item in terms of the percentage of accuracy obtained on it. The rank correlation coefficients obtained are .88, .87 and .86 between the pooled percentage of accuracy of the three groups and those of groups VII, VI and VIII respectively. All these coefficients are significant beyond .01 level and can be interpreted as indicative of a genuine trend for the items of our Guess Who Test.

Not only the percentage of accuracy but also the frequency of guesses attempted on each item appears to be higher for some items and lower for others. When the frequency of guesses made on each item by the members of the three groups were pooled and

TABLE^W 17 : DISTRIBUTION OF SELF-RATINGS, GUESSES AND THE PERCENTAGES OF ACCURACY OVER THE 20 ITEMS OF THE GUESS WHO TEST.

I T E M S	FREQUENCY OF SELF-RATINGS (A)			FREQUENCY OF GUESSES (B)			PERCENTAGE OF ACCURACY (C)		
	GROUPS : VI VIII VIII			GROUPS : VI VII VIII			GROUPS : VI VII VIII		
1	8	7	5	9	13	11	<u>39</u>	<u>62</u>	<u>46</u>
2	9	6	5	12	12	13	<u>28</u>	<u>29</u>	<u>53</u>
3	11	8	8	11	13	14	<u>42</u>	<u>38</u>	<u>39</u>
4	15	12	12	18	15	16	<u>47</u>	<u>43</u>	<u>65</u>
5	2	9	6	2	8	14	26	<u>57</u>	<u>47</u>
6	18	12	10	17	14	16	<u>43</u>	<u>44</u>	<u>64</u>
7	2	0	0	1	6	8	7	7	10
8	19	11	8	15	13	17	<u>32</u>	<u>34</u>	<u>58</u>
9	0	2	4	2	5	10	10	14	28
10	15	16	6	11	14	14	<u>31</u>	<u>49</u>	<u>46</u>
11	6	6	8	5	8	11	<u>30</u>	<u>33</u>	<u>52</u>
12	7	11	4	1	10	10	4	19	27
13	1	1	1	3	8	10	24	19	16
14	2	2	2	0	4	5	0	8	6
15	4	3	3	7	10	9	17	<u>36</u>	16
16	4	4	4	3	7	9	33	11	<u>36</u>
17	6	6	3	7	12	11	<u>36</u>	25	15
18	5	4	4	4	6	8	19	20	11
19	2	5	5	3	7	11	20	29	28
20	8	6	7	10	8	9	23	10	19
Mean	7.2	6.5	5.2	7	9.6	11.3	25.5	30	34

the items ranked according to the frequency of guesses, it appeared that there was a close relationship between the ranks of different items in this pooled rank-order and their ranks in each of the three groups. This relationship is indicated by a mean rank correlation coefficient of .91 which is significant beyond any recognised limit of confidence. For groups VI, VII and VIII separately the correlation coefficients are found to be .93, .95 and .86 respectively. Thus there is no doubt that our three groups acted in a highly consistent manner in allocating their guesses among various items. More interesting is the close relationship found between the frequency of guessing on each item and the percentage of accuracy attained. If the items are ranked according to the frequency of guesses made and the percentages of accuracy attained on them by the three groups of our study and the two ranks correlated, a rank correlation coefficient of .81 is obtained. This rho is significant beyond .01 level.

As a tentative explanation for this consistent trend among the different items of our Guess Who Test, it was postulated that the content of items should have something to do with the observed differences. Following Edwards' (1953, 1957) demonstrations that people tend to subscribe socially desirable items of a questionnaire more often than those with a socially undesirable flavour, it was assumed that:

1. The twenty items of the Guess Who Test should vary according to their frequency of employment for self-rating;
2. There should be some degree of relationship between the variance of these items according to their social desirability and their frequency of occurrence and degree of accuracy in predicting others' responses.

An analysis of the data seems to confirm both these assumptions. In the first place, the three groups showed a high degree of consistency in their frequency of self-rating on different items. The rank correlations between the pooled frequencies of all three groups and each of the groups VI, VII and VIII are found to be .92, .94 and .87 respectively. These correlations which are highly significant leave no doubt on the fact that our three groups show a striking tendency to favour some items over others in making self-ratings. While forty people have mentioned item six (i.e. someone you can rely on, who is very sincere and keeps his or her word) as best describing them, only two subjects have chosen item seven (i.e., someone who does not care much about other people and is concerned only with his or her own interests). The frequencies of self-ratings on various items are given in Table 15, part A. A study of the actual wording of these items reveals that while most of the items over-chosen or under-chosen for self-rating confirm our interpretation in terms of social desirability, the placement of a few items presents some difficulty. If we choose the mean frequency of all items, 19, as a standard

of classification into the over-chosen or under-chosen categories, it is observed that ten items fall above this mean and ten others below it. The first four items (i.e., items 6, reliability, 4, sociability, 8, co-operativeness, and 10, sense of humour) and the four last items (i.e., items 7, selfishness, 13, bossiness, 14, lack of sociability, and 9, ill-temperedness) are well in line with our interpretation. But the classification of items 15 (social influence) and 18 (leadership) and to some extent 17 (achievement in Maths) as socially undesirable, and the classification of items 12 (shyness) and 11 (anxiety over one's mistakes) as socially desirable does not agree with the apparent common-sense implications of their contents. This is also true of the relatively low rank afforded item 2 (to take life easily). These somewhat unexpected results may be explained by the assumption that the interpretation of the children of our study may not have been the same as our common-sense understanding. "It is only too obvious when talking to two persons who undertake to rate others that their conception of terms such as suggestibility, sense of humour, persistence, and so forth, varies widely and that on occasions quite contradictory meanings are associated with the same trait name" (Eysenck, 1960, p.167). If this observation be true of trained adult raters, it must be equally true of our young inexperienced subjects. There is still another

possibility - particularly in the case of such obviously misplaced items as items 15 and 18 (indicating influence and leadership) that another factor of modesty may have been in operation. This possibility is supported by the observation that when, in the context of our leadership question, subjects were asked whether they thought to have been nominated as a leader by their friends, only about 16% of them answered "yes".

Notwithstanding these contradictory exceptions, the rank orderings of our items in terms of social desirability - as defined above - correlates very highly with their rank ordering according to the percentage of accuracy ($\rho = .64, p < .01$). If the items are divided into two groups according to their percentage of accuracy, it is observed that only two items, 12 and 20, of the ten items overchosen for self-rating are under average in accuracy and only one of the items above average in the percentage of accuracy (item 5) falls below average in self-rating. There remains no doubt that the amount of accuracy on each item is highly related to its social desirability. There is also a very close relationship between an item's social desirability and its frequency of employment for guessing others' responses. This relationship is represented by a rank correlation coefficient of .85 which is significant much beyond .01 level.

These findings are more or less in accord with our findings in connection with the sociometric perception proper. The same

processes and factors that operated to diminish the percentage of accuracy in guessing one's rejection status may also be responsible for the low degree of accuracy attained in predicting others' undesirable responses. It was seen above that while over 57% of positive guesses were accurate, only 25% of the negative guesses were so. In the case of the Guess Who Test items, the mean percentage of accuracy for the ten items with above average social desirability is found to be 38% while its equivalent value for the ten socially undesirable items is only 21%. The mean accuracies of the five most desirable and five least desirable items show even more difference (45% and 14.6% respectively). While the difference between the means of the two groups of ten desirable and ten undesirable items is significant at .05 level ($t = 2.12$, $df = 18$), the difference between the means of the five most desirable and five least desirable items is significant at much beyond .01 level of confidence ($t = 7.5$, $df = 8$).

The question of the chance expectancy of the observed accuracy of guessing on the Guess Who Test can be approached in the same way as described earlier in connection with the chance expectancies of the sociometric perception proper. The formulae and nomograph discussed there are easily applicable to the Guess Who Test and the percentages of chance accuracies of 17%, 18% and 19% found for groups VI, VII, and VIII respectively are

equally true of their guesses on each item of the G.W.T. A χ^2 test showed that eight of the percentages of accuracy achieved by groups VI and VII and ten of the percentages of accuracy attained by group VIII are significantly larger than their chance equivalents at .01 level and much beyond. These are designated by underlining in Table^{IV} 17. Only two of the differences fall at .05 level of significance (Group VII, item 8; Group VIII, item 16). All these items are above average in social desirability.

The mean percentages of accuracy over all twenty items are found to be 29%, 33%, and 37% for the three groups respectively. These values are larger than their chance expectancies at .01 level of significance. Thus, although guesses made on over half the individual items fail to exceed their chance expectancies, the proportion of accurate guesses for all twenty items are found to be larger than their chance expectancies for all three groups. This proportion, however, is not very large. On average every third guess is found to be accurate. In view of the difficulties involved, this amount of accurate guessing is very satisfactory and suggestive of some genuine ability.

This is more significant in view of the finding that such situational factors as mutuality and congruency of choice which could account for the bulk of accuracy in guessing one's sociometric status play much less important parts in the accuracy of

Guess Who Test predictions. There is a tendency for the reciprocity of attributions to vary with the social desirability of an item as defined above. For less desirable items, i.e. items falling below average in the frequency of self-ratings, the proportion of reciprocated attributions hardly reaches its chance level of expectancy. For more desirable items this value is higher, but seldom does it exceed the proportion of mutuality observed above in connection with sociometric rejections. This observation is also true of the congruency between choices and guesses on the G.W.T.

Although the inclusion of the self-rating and guessing versions of the Guess Who Test in the same format provided a strong basis for the first task to influence the second, it is observed that in about one fifth of the cases self-ratings are not followed by guessing on the same item, and a much larger proportion of guesses were not accompanied by self-ratings at all. This can be taken as evidence that our subjects did make a distinction between their own self images and their images as perceived by others. This is also indicated by the observation that in many cases a subject's self-rating did not coincide with the ratings made by his peers.

From the point of view of the processes involved, the Guess Who Test can be said to occupy a position midway between an

ordinary rating scale and a sociometric test. To the extent that it requires the subjects to describe their peers in terms of certain trait names or behaviour sketches it is a rating scale designed to differentiate the top (and/or bottom) extremes of the population on the given traits. But the way in which the questions are put, and the fact that the individuals are left free to choose their subjects of rating on each item make the test resemble an ordinary sociometric questionnaire. The degree of resemblance, however, is highly dependent on the content of the individual item concerned.

In the same manner, our second measure of social perception falls somewhere between the notion of empathy as developed by Dymond and others and the notion of sociometric perception or sociempathy as developed by Tagiuri, Ausubel and others. It is a measure of empathy, because it demands that the subjects should put themselves into the shoes of others and predict how these others would see and describe them. It is a measure of sociempathy in the sense that it requires that the subjects should nominate those who are likely to have chosen them on each item. No wonder then that our two measures of social perception should be correlated. This correlation is represented by phi coefficients of .28, .58, and .32 for groups VI, VII, and VIII respectively. Of these only .58 is significant and the rest fall somewhere between the .10 and .20 levels of significance.

The failure of these correlations to reach an accepted level

of significance can partly be accounted for by the fact that a considerable number of subjects were absent on the day the Guess Who Test was administered. This not only diminished the amount of accuracy by the amount of accuracy due to the absent subjects but it also nullified all guesses which went to them. Another vitiating factor may have been the relatively long time that had lapsed between the administration of the Sociometric test and the G.W.T. As was stated in the second chapter, the G.W.T. was given about four months after the original sociometric test. It is quite conceivable that the sociometric structures of the groups under study may have undergone some change during this period. In virtue of the close relationship between the perceptual and actual facets of the sociometric situation and the fact that accuracy is strongly affected by this situation as well as the technique employed to explore it, no doubt this change should be reflected in the results of our Guess Who Test and decrease the degree of relationship between the two tests. As an example of this change, it is interesting to note that the correlation between the subjects' status on the criterion of "Best Friend" included in both versions of the test showed a great deal of change over this interval. Indeed, the phi correlations between the two measures of friendship were only .33, .32 and .04 for the three groups VI-VIII. Of these only .33 is significant at .05 level.

3. CORRELATES OF SOCIAL PERCEPTION IN CHILDREN

A. SOCIAL PERCEPTION AND PERSONALITY

The average Extraversion score, as measured by the J.M.P.I., for the whole sample of 220 is found to be 12.59 with an S.D. of 3.08. This is somewhat higher than the mean reported by Furneaux & Gibson for their standardization group as well as those reported by Callard & Goodfellow (1962) and Costello & Brachman (1962). The standard deviation of E scores for our group, however, is smaller than all those found in former studies, with the possible exception of that found by Callard & Goodfellow for their Comprehensive School sample (S.D. 2.99). The differences are too small to be significant and may be attributed to the more homogeneous nature of our sample in terms of age and I.Q. range.

The mean of the neuroticism scores for the whole sample, 7.53 ± 3.19 , is also higher than those reported in previous studies. It is, however, nearer to the mean value of N as found by Furneaux & Gibson than any other group's reported so far, these all being smaller than that found by Furneaux & Gibson. The nearest mean N to our group's, and to that of the original standardization group's, is that reported by Callard & Goodfellow for their Secondary Modern school samples, these being 7.03 and 7.04 respectively. The following table (Table ^V_A 18) summarizes the findings of various studies using the J.M.P.I. The results of our own study are given at the bottom of the table.

STUDY :	BOYS		GIRLS	
	EXTRAV.	NEUROTICISM	E.	N.
Furneaux & Gibson (N = 156)	12.39 3.46	7.35 3.54	-	-
Callard & Goodfellow Rural Gramm. School	11.9 3.34	5.99 3.48		
Rural Sec. Modern	11.85 3.13	7.03 2.98		
" Comprehensive	11.62 2.99	6.68 3.27		
Urban Gramm School	12.11 3.26	6.42 3.47		
" Sec. Modern	12.07 3.11	7.04 3.27		
Costello & Brachman				
English Sample, N = 534	12.16 3.35	6.30 3.17		
Canadian Sample, N = 509	12.05 3.61	5.90 2.84		
Present Study N = 220	12.58	6.56	12.6	8.35

TABLE ^{IV} 8 : MEANS OF VARIOUS SAMPLES ON THE EXTRAVERSION AND
NEUROTICISM SCALES OF THE J.M.P.I.

Calculated for boys and girls separately, the mean values of E are found to be 12.58 and 12.60 respectively. The superiority of boys over girls in terms of extraversion is very slight indeed, much less than that found by Costello & Brachman. The corresponding values of N are 8.35 for girls and 6.56 for boys. The difference between the two groups here is statistically significant and in line with the findings of other studies using J.M.P.I. or the original M.P.I. (Eysenck, 1959). Studies using other measures of neuroticism or emotional instability have also found girls worse off than boys.

Considering the various sub-groups (classes) of the study separately, we find a considerable degree of variation both in E and N over different groups. Table^{IV} 19 represents the means of our eight groups separately. As is seen from this table, the mean of E varies all the way from 11.17 (girls of group VII) to 14.21 (girls of group II). In the same way the mean of N varies from 5.29 for the boys of group VI to 9.7 for the girls of group VIII. On the whole, the last three groups, representing a secondary modern school of East London, score somewhat lower than the first five groups, representing a county secondary school in Surrey. The differences, larger in the case of N scale, fall short of significance. It is also interesting to note that while on the dimension of extraversion only in two out of eight cases

GROUP	GIRLS		BOYS		BOYS AND GIRLS TOGETHER	
	MEAN E	MEAN H	MEAN E	MEAN H	MEAN E	MEAN H
I (N=30)	12.77	8.83	13.50	6.75	13.06	8.03
II (N=25)	14.21	8.85	11.09	6.63	12.84	7.83
III (N=29)	13.11	7.41	13.25	7.00	13.17	7.24
IV (N=20)	12.35	7.82	12.50	5.66	12.41	6.93
V (N=28)	13.00	8.68	12.50	7.17	12.78	8.03
I - V					12.86	7.62
					± 3.11	± 3.21
VI (N=32)	11.73	6.23	12.52	5.29	12.15	6.06
VII (N=25)	11.16	9.25	11.61	7.46	11.40	8.32
VIII (N=22)	12.00	9.70	13.50	7.00	12.81	8.22
VI - VIII					12.10	7.37
					± 3.32	± 3.17
I-VIII N = 220	12.6	8.35	12.53	6.65	12.59	7.53
					± 3.08	± 3.19

TABLE 19. MEANS OF VARIOUS GROUPS ON EXTRAVERSION AND NEUROTICISM.

girls score higher than boys, in all eight groups involved their mean N scores are larger than those of the boys. For the 141 individuals of the first five groups, E and N dimensions produce a product-moment correlation coefficient of $-.096$. This may be taken as a proof of the factorial independence of the two scales of the J.M.P.I.

Coming to the correlation between Extraversion and Accuracy of social perception, we find it varying from group to group and from one criterion of choice to another within each group. Almost all these correlations, however, fail to reach any accepted level of significance. The general expectation is to find extraversion somewhat negatively correlated to accuracy of social perception. But the particular design of experiment adopted for gauging social perception made the realization of this expectation difficult. As will be remembered, accuracy of perception was scored by the number of choices accurately guessed. Thus those who had received no choices - the underchosen - could not be accurate in their guesses and those who were highly chosen had a much higher chance of being accurate in their guesses. On the other hand the bulk of evidence indicates that sociometric choice status is positively related to Extraversion. The relationship, however, is not very high. Mann (1959) has found that eleven of the twelve trends emerging from independent studies of the relationship between E

and sociometric choice status & popularity are in the positive direction. In this study, the relationship between extraversion and sociometric choice status, pooled over all four criteria and for all eight groups together, is represented by a Phi-correlation of $.197 \pm .067$. The corresponding value of Phi for Extraversion and the accuracy of social perception is $.117 \pm .068$. The neuroticism scale was negatively correlated to both sociometric choice status and the accuracy of social perception, the values of Phi being $-.039$ and $-.072$ respectively. None of these values, however, can be regarded as statistically significant. The observed low negative correlation between sociometric choice status and neuroticism is in accord with the findings of an extensive study by Thorpe (1955) using a similarly derived measure of neuroticism.

When the top and bottom 25% of each group in terms of the Extraversion is considered separately, it is seen that the two groups differ more or less significantly on all other criteria of group relations included in this study. Figure^{IV} II summarizes these differences very clearly. Thus the top 25% on Extraversion are also top on the number of choices they received on the four criteria of choice, on the criteria of popularity, leadership and friendship. On all these criteria they also score higher than the middle 50% in terms of Extraversion. They are also higher

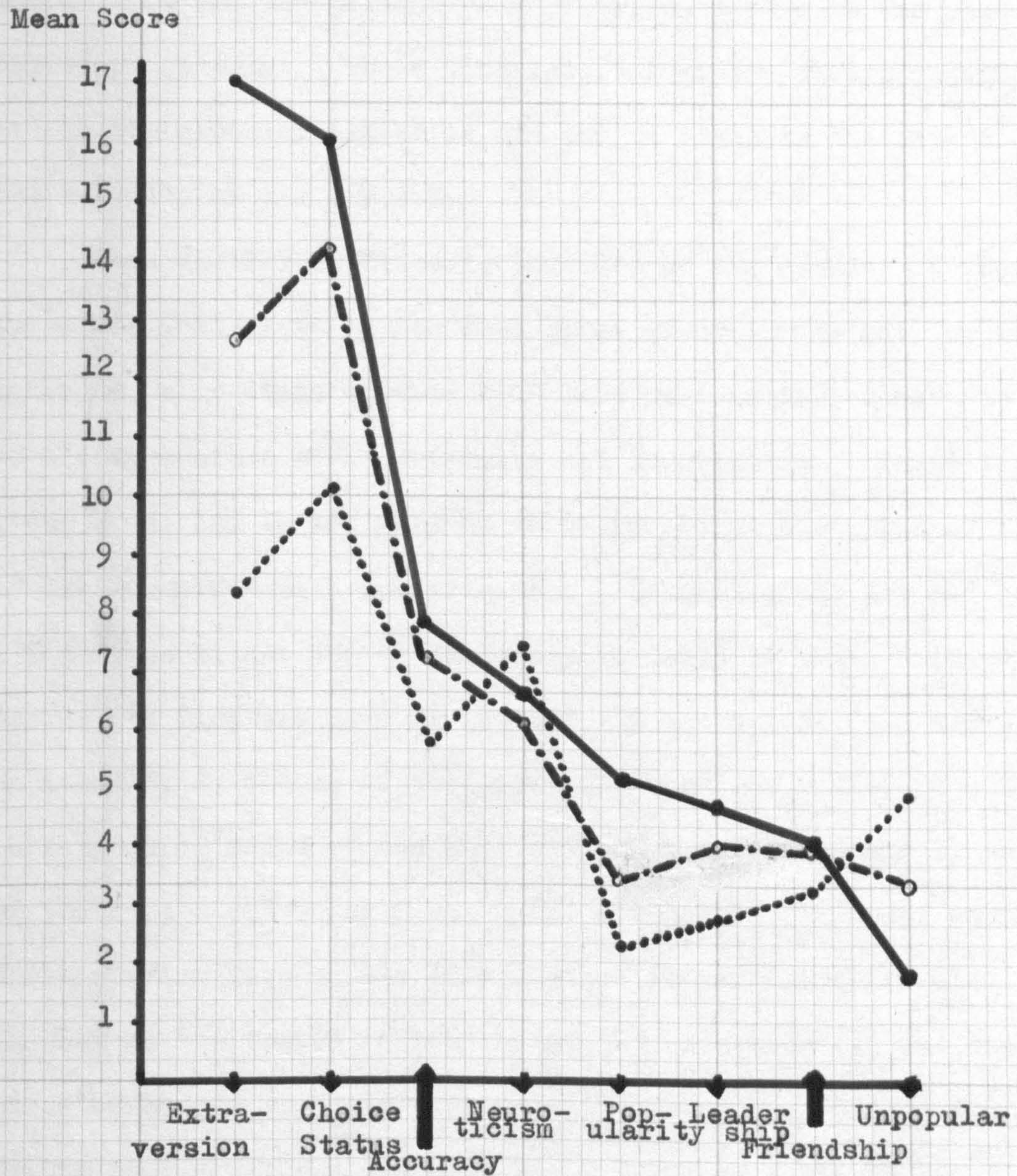
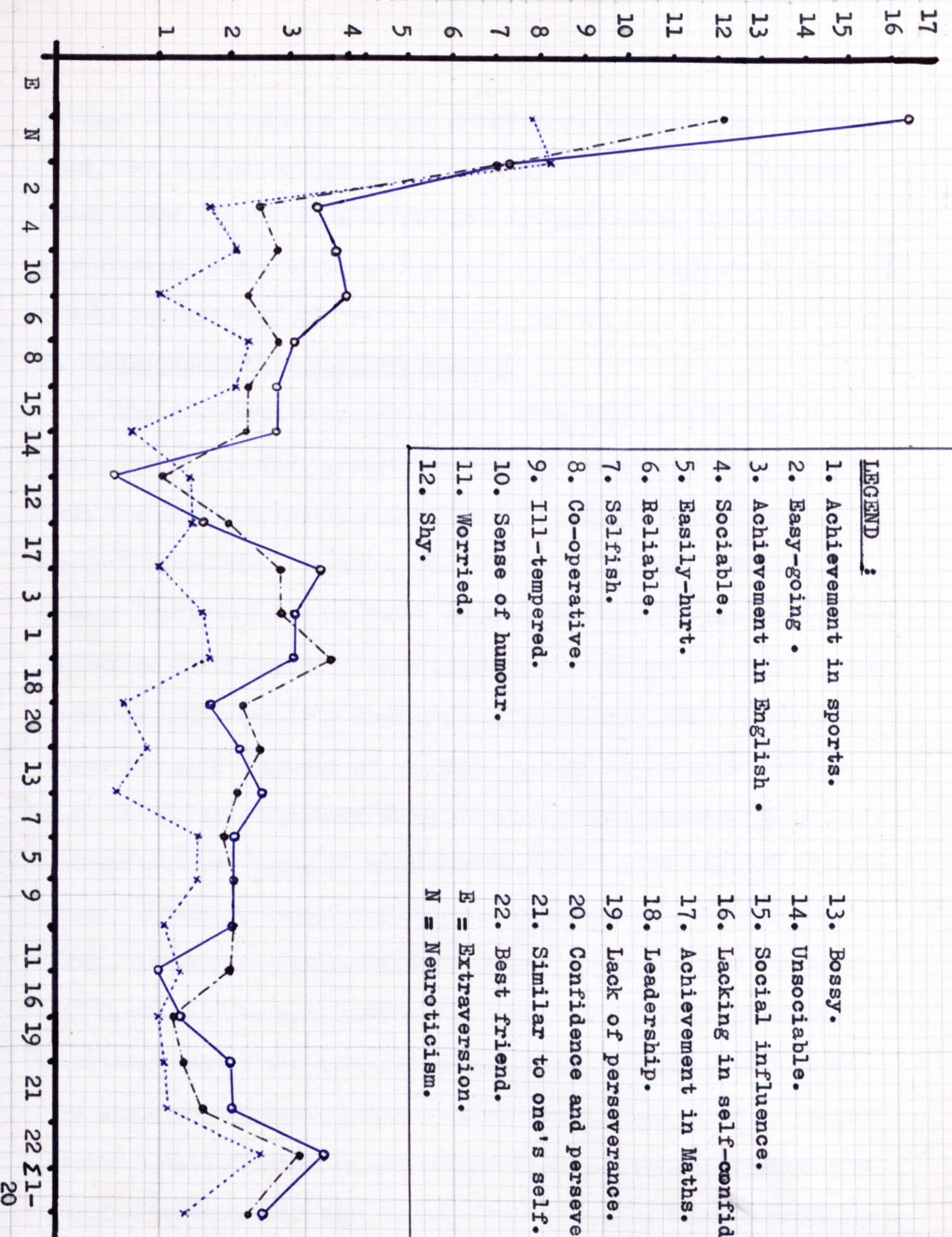


FIGURE II : MEANS OF TOP AND BOTTOM 25% AND MIDDLE 50% IN TERMS OF EXTRAVERSION ON OTHER MEASURES.

TOP 25% : ——— MIDDLE 50% : -.-.-.- BOTTOM 25% :

on the accuracy of their social perception. On the other hand, the bottom 25% score higher than the other two groups in terms of Neuroticism and unpopularity - a criterion used with the last three groups only. These findings, though not always significant, are in the expected direction and can be taken as indicative of the validity of the J.M.P.I.

Some further evidence is provided by the results of the Guess Who Test given to the last three groups. As will be remembered, some items of this test were particularly chosen to bear on the dimensions of Extraversion and Neuroticism. Prima facie, items 2, 4, and 10 are related to Extraversion and items 12 and 14 are concerned with introversion. Comparing the top and bottom 25% and the middle 50% of the group in terms of their Extraversion scores, we find the mean of the top 25% to be 3.45, 3.7 and 3.95 on items 2, 4, and 10 of the Guess Who Test respectively. The corresponding means of the bottom 25% are 1.76, 2.1 and 1, those of the middle 50% being 2.45, 2.82, and 2.25. In other words, those scoring high on the dimension of Extraversion are also rated higher on the traits of easy-going (2), sociable (4) and the sense of humour (10) and vice versa. The scores of the three E-groups on the various items of the G.W.T. are shown in Fig.^{IV} 3. As is seen from this figure, on most traits, the top 25% score higher than both the bottom 25% and the middle 50%. The difference



between the two extreme groups, however, is almost always larger than that between either of them and the middle 50%. In a few cases where the observed trend does not agree with the a priori expectation (e.g., items 16 and 19), the explanation must be sought in some sort of "halo" effect.

B. SOCIAL PERCEPTION AND INTELLIGENCE

For the first five groups, 11+ intelligence test results were available. The five groups are arranged according to their I.Qs. Thus the mean I.Q. score for group I is 118.15 whereas that for group V is 94.51. Comparing the mean accuracies of the five groups (Table^{IV} 11), it is found that those high in I.Q. tend to be higher in their accuracy of sociometric perception as well. The trend is indicated by a rank correlation coefficient of .80 between the rank statuses of the five groups on I.Q. and the accuracy of social perception respectively. This value of R is significant at .06 level of significance (one-tailed test of significance) (Edwards, 1954). Correlations between intelligence and social perception for individual groups varied all the way from .37 (group II) to -.01 (group V). None of these correlations reach any recognized level of significance. Again, in view of the close relationship between choice status and accuracy of perception, this finding is not unexpected. Numerous studies have found a tendency for over-chosen individuals to be more intelligent.

The tendency, however, is not very impressive. Mann's (1959) review of literature puts the median correlation between intelligence and choice status close to .10. Among studies directly concerned with sociometric perception, Trent (1957) has reported a non-significant correlation between intelligence and sociempathy.

C. SOCIAL PERCEPTION AND SOCIAL STATUS

Some of the evidence bearing on the relationship between social perception and the social status of the perceiver in the group was discussed in the previous chapter. In this study three different measures of social status were employed. These were sociometric choice status as defined by the number of votes received on the four criteria of choice, popularity, as determined by the number of choices received on the criterion of "most popular", and leadership as defined by the number of choices received on the criterion of leadership. The rationale for treating these three aspects of social status separately has already been discussed in connection with the measures used for assessing them.

The following table summarizes the relationship obtaining between the accuracy of social perception, pooled over all four criteria, and the three indices of social status, for the eight groups of this study separately.

As it appears from the table, social perception as measured by one's awareness of his choice status in the group is highly

	Groups:	Choice Status	Leadership	Popularity
Accuracy of Sociometric Perception, pooled over All four Criteria	I	Phi = <u>.73</u>	.072	.067
	II	.33	<u>.41</u>	.17
	III	<u>.42</u>	.29	.05
	IV	.24	-.04	.03
	V	<u>.71</u>	<u>.40</u>	<u>.52</u>
	VI	<u>.77</u>	<u>.45</u>	.35
	VII	<u>.68</u>	.01	<u>.39</u>
	VIII	<u>.82</u>	.18	<u>.73</u>

related to one's actual status in the group. In other words, those members who are chosen by a large number of their group-mates are better aware of their position in the group than those who are not highly chosen. However, there is some difference between various groups as to this relationship, and the Phi correlation varies all the way from .82 (group VIII) to .24 (group IV). The majority of the correlations are highly significant. Part of the relationship, no doubt, is due to the particular design of experiment adopted for measuring social perception. As will be remembered, social perception was scored in terms of the number of accurate guesses made, the accuracy of a guess depending on choices made by others. Thus, those who received no choices were bound to have no accurate guesses. On the other hand those who received many choices were not only physically able to make

accurate guesses but also were probabilistically in a much better position. In terms of symbols, if the proportion of choices received by a subject be shown by $C/d(N-1)$, where $d(N-1)$ represents the total number of choices made by the group, and the number of guesses made by him be shown by $g/(N-1)d$, it is obvious that when $C/d(N-1)$ is zero, ^{the accuracy of} g is also physically bound to be zero. As C departs from zero the probability of g being correct increases, reaching to the maximum degree of probability when C reaches $N-1$. In such a hypothetical case the probability of g 's accuracy is equal to one. In view of this complication, the observed high correlations must be interpreted very cautiously.

If the relationship between choice status and the accuracy of perception is a genuine relationship, it must be also present in other measures of social perception. To test this possibility, Phi correlations were calculated between the summed choice status of the last three groups and their accuracy of perception on the Guess Who Test. The Phi values obtained are .15, .10, and .10 for groups VI, VII, and VIII respectively. None of the correlations obtained are of any significance to deserve further discussion. In this connection, it should be noted that, despite the three-month interval between the administration of the sociometric test and that of the Guess Who Test, and despite the fact that the latter test contained many opposite items, nevertheless, the number

of total votes received on the second showed a significantly positive correlation with the choice status on the first test. The values of Phi for the three groups were .33, .73, and .51 respectively.

Of the eight correlations between leadership and accuracy of social perception only two reach the .05 level of significance and but one is significant at .01 level. Three of the remaining correlations are of a zero order and one of them is in the opposite direction. Thus our findings only partly bear out the findings of such studies as Chowdhry and Newcomb (1952) regarding the high social sensitivity of group leaders. The general trend, however, agrees with that found by other studies. Mann (1959), reviewing the results of 15 independent studies yielding 101 correlations between leadership and the ability to predict various aspects of the opinions of other group members, found that in 74% of the cases leaders were found to be more accurate. But only 15 of these correlations were significant, whereas only one out of the 26 negative correlations was statistically significant. Despite the criticism made by Campbell (1955) regarding the artificial nature of the correlation between leadership status and social perception as defined by the leader's ability to predict his own status, it would appear that most researches have obtained positive results with impressive consistency. Part of the low

correlation found in this study may be attributed to the relatively low correlation between leadership and sociometric choice status. For the whole sample of eight groups the Phi correlations between leadership and the sociometric choice status on criteria 1, 2, 3 and 4 were .341, .403, .241, and .219 respectively. Although, with an N of 259, all these correlations are highly significant, they are not high enough to upset or exploit the very high relationship between choice status and accuracy of perception discussed above. The observed relationship between leadership and the four criteria of choice is quite in accord with the findings of Gibb (1950) and lends further support to our argument respecting the desirability of differentiating between sociometric choice status and leadership.

Of the eight correlations between popularity and accuracy of social perception, two are significant at .01 level and one at .05 and one (.35) just under .05. The rest are not significant. The complicating factors noted above in connection with leadership and social perception are also true of the relationship between popularity and social perception. Reviewing the table of correlations, no significant trend or tendency is observed to obtain from one variable to the next.

To sum up, although there is evidence of some positive correlation between social perception and social status as represented

by sociometric choice status, leadership, and popularity, yet the relationship between these variables is so complicated by the special design of experiment employed that little firm conclusion can be derived from these correlations. In this connection, perhaps it is self-satisfying to remember that almost all other studies of the relationship between social perception and achievement in group activities are subject to similar criticisms, uncertainties and puzzling methodological complications (cf. Gage, 1953; Gage & Exline, 1953; Steiner, 1955).

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CHAPTER V: Analysis of Results of the Second Study.

1. A review of the results of the test battery:-

A. Age Differences: Figure V₁ shows the means of the first and second group on the various tests included in the battery. As will^{be} remembered, the first group - 57 students of a day training college - consisted of much older members than the second group. As is apparent from Fig. V₁, the two groups differ on several of the dimensions studied. The younger group is much higher on the dimension of Neuroticism, Radicalism and Extraversion, whereas they score slightly lower on the measure of tender-mindedness. Compared against the means of Eysenck's (1959) standardization group, our groups as a whole score slightly lower on both Neuroticism and Extraversion. Considering the two groups separately, we find the older-age group much lower

		Extraversion	Neuroticism
Eysenck's Norms (N=1600)		7.96±2.97	6.15±3.33
This Study:	{ The whole sample (N=106)	7.4 ±2.86	5.9 ± 3.42
	{ First group (N=57)	6.7 ± 3.01	5.2 ± 2.75
	{ Second group (N=49)	7.9 ± 2.54	8.7 ± 2.87

than Eysenck's sample both on Extraversion and Neuroticism, while our younger age group does not differ from Eysenck's

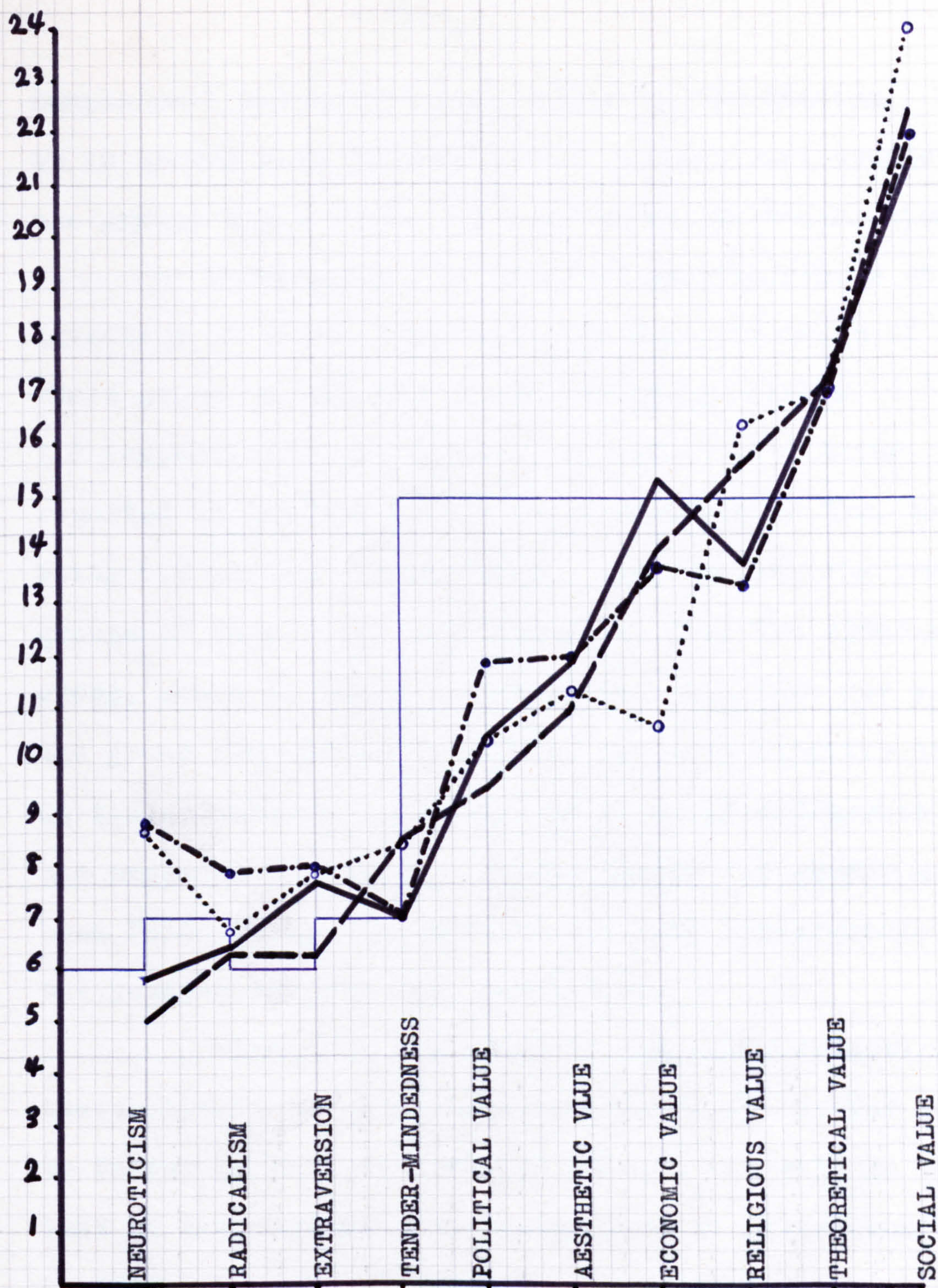


FIGURE V₁ : MEANS OF THE TWO GROUPS ON VARIOUS VARIABLES, SEPARATELY CALCULATED FOR MEN AND WOMEN.

GROUP I: MEN ——— WOMEN - - - - -
 GROUP II: MEN •····· WOMEN ○·····

sample on E but scores much higher on Neuroticism. This is in accord with Eysenck's own findings that younger age groups score about $1/5$ S.D. higher on Neuroticism.

Considering the means of the two groups on the inventory of social attitudes, we find the means of our whole group on Radicalism and Tender-mindedness, 6.8 and 7.9 respectively, in complete agreement with those reported by Eysenck (1947) for his sample of 750, these being 6.8 and 7.8 respectively. Considering the two groups of this study separately, we find the older-age group, group 1, lower on Radicalism than both our younger age group and Eysenck's sample, but very slightly higher on tendermindedness. Again the observed difference is in the expected direction; older people and women have been found to be less Radical and more tender-minded than the younger and the male population.

Regarding the means of six value dimensions, there appears to be a consistent tendency for our sample to favour certain values over others. It will be remembered that we had employed the second part of Richardson's test. On this part each of the six value areas are represented by 10 items and possible range of each value is from 0 to 30. If all six value dimensions - or, in more exact terms, the verbal statements representing each value - were of equal

attraction for the subjects concerned, then the mean score on each value would be 15. As figure IV₁ shows, the means of the six values vary all the way from 9.9 (political value of the first group) to 23 (social value of the second group). There is complete agreement between the two groups as to the relative importance of the six values. They are also in complete agreement with Richardson's original group (N = 400) in terms of their relative standing on various value dimensions. This may be taken as an indication of the reliability of the second part of the test as compared against its complete version.

Regardless of this over-all agreement, the two groups of this study demonstrate some differences in their mean scores on various value dimensions. Thus the younger age group appears to be somewhat higher on Political and Social value and slightly higher on the Aesthetic value, whereas the older group scores much higher on the economic value. In view of these differences it seemed necessary to treat the two groups separately.

B. Sex Differences: Table VI summarizes the means and standard deviations of the two groups for men and women separately. The same data are pictorially represented in Fig. IV₂. As is expected, men tend to score higher on

		Ext.	Neu.	Rad.	Tend.	Aes.V	Eco.V	Pol.V	Rel.V	Soc.V	The.V	
GROUP I	M.	Mean	7.65	5.7	6.3	7	11.8	15.3	10.45	13.7	21.5	17.25
		S.D.	2.97	3.34	3.21	2.66	4.8	4	3.7	8.67	2.24	3.37
	W.	Mean	6.27	5	6.4	8.65	11.2	14	9.6	15.8	22.3	17.1
		S.D.	2.93	2.42	2.89	2.33	4.32	4.83	3.73	8.35	3.71	3.65
GROUP II	M.	Mean	8	8.8	7.96	7	12	13.8	11.9	13.3	21.9	17
		S.D.	2.7	2.4	2.72	2.83	4.83	3.1	4.72	9.4	3.77	3.85
	W.	Mean	7.9	8.7	6.8	8.4	11.3	10.7	10.3	16.4	24	17.2
		S.D.	2.41	3.2	2.35	2.57	4.47	2.88	3.64	9.14	3.27	3.3
WHOLE SAMPLE		Mean	7.4	5.9	6.8	7.9	11.5	13.4	10.4	15	22.5	17.1
		S.D.	'	'	'	'	'	'	'	'	'	'

TABLE VI : MEANS AND STANDARD DEVIATIONS OF THE TWO GROUPS ON THE
TEN VARIABLES FOR MEN AND WOMEN SEPARATELY.

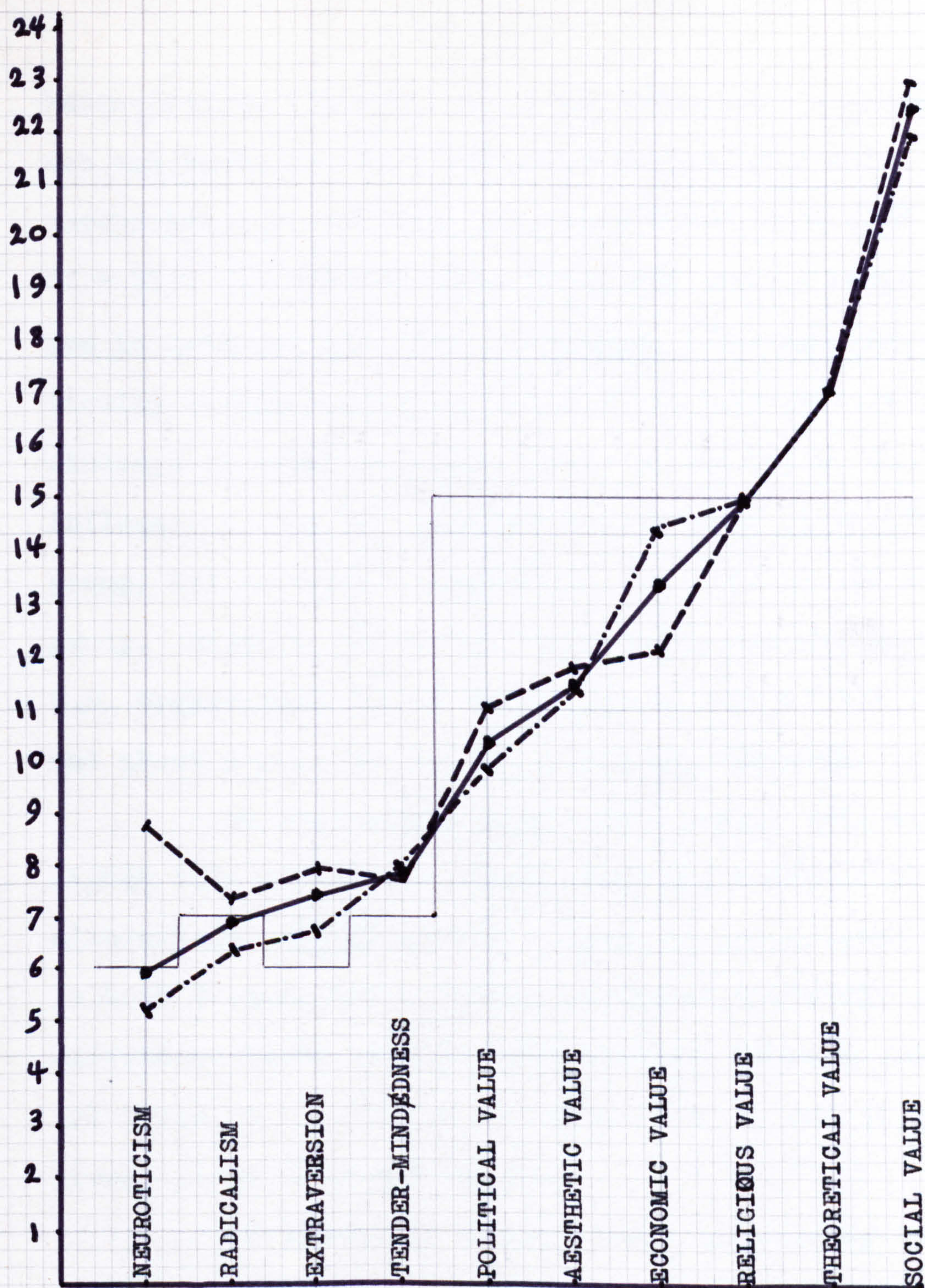


FIG. V₂ MEANS OF THE TWO GROUPS OF THE SECOND STUDY ON THE TEN PERSONALITY DIMENSIONS INCLUDED IN THE STUDY.

GROUP I (N 57) : - - - - -

THE WHOLE SAMPLE (N 106): ———

GROUP II (N 49) : - - - - -

Extraversion. However, only the difference between the men and women of the first group on this variable approaches the .05 level of significance ($t = 1.68$ $df = 55$). On Neuroticism, women have scored lower than men in both groups. The difference, although statistically insignificant, is contrary to expectation and the findings of other studies. This may be due to the influence of the age variable in the case of the first group, but is hard to explain in the case of the second group. Eysenck (1959) has found women scoring about $\frac{1}{3}$ S.D. higher than men on the whole version of the M.P.I. and about $\frac{1}{2}$ S.D. on the short version (Eysenck, 1958).

On Radicalism, women have scored slightly higher than men in the first group and considerably - although not significantly - lower in the second group. In both groups, women excel in tender-mindedness, the difference being significant somewhere between .05 and .01 level ($t = 2.61$ and 2.2 with df of 55 and 47 for groups I and II respectively).

On Aesthetic value, women score lower than men in both groups. The difference, though too small to be significant, is interesting in that it is both against the common sense expectation and the findings of other

studies using Allport-Vernon test (Dukes, 1955).

Richardson herself has also found women higher on this value than men. The large size of the standard deviation is indicative of the great amount of variation among subjects in responding to the items keyed for this value.

Going to the Economic value, we find the men of both groups significantly (at .05 and beyond) higher than women. The first group has a higher mean than the second group and even the women of the first group appear to be slightly more economically oriented than the men of the second group. The same trend is observed with regard to the political value. Here, however, the younger group prove more politically oriented than the older group. On religious value, again women prove superior to men in both groups and the younger women prove to be more so. In other words, the younger the women the more religiously oriented they are and vice versa for the men. The same is more or less true of the social value which, it may be noticed, has produced the smallest amount of variance and the highest value of mean. On the theoretical value, there is little difference between the means of the men and women of either group. The very slight superiority of men in the first group is balanced by a similarly slight superiority for women in the second group.

C. Inter-correlations between various measures: In the chapter describing our tests mention was made of the studies relating the ten dimensions of personality included in this study. Correlations were run between each of these dimensions using the scores of 67 individuals representing both groups. The correlation matrix obtained is presented below. The first two variables are the sex and age variables respectively. The first represents the men only and should be interpreted as such. With a degree of freedom equal to $67-2 = 65$, only values of r equal to .24 and .31 can be regarded as significant at .05 and .01 levels. (Two-tailed test of significance. If a one-tailed test can be justified, the .05 point of significance equals $r=.20$). In interpreting the correlation matrix, it should be kept in mind that in view of the particular scoring key used in connection with the Values Test, some measure of artifactual correlation is unavoidable. Taking the significant values of r only, it appears that being a man is significantly related to the Economic value. Age is negatively correlated with Neuroticism and social value - younger subjects seem to be both more neurotic and more socially oriented, but less economically oriented.

	Sex	Age	Entr.	Neuro	Aesth	Econ	Pol.	Relig	Social	Theor	Rad.	Tend.
1	1	-.10	.19	.18	.13	.25	.05	-.18	-.10	.02	.20	-.19
2		1	-.04	-.51	-.20	.24	-.02	.09	-.35	.08	-.09	.19
3			1	.18	-.06	.36	.11	-.23	.01	.08	-.16	-.13
4				1	.34	-.12	.02	-.26	.33	.04	.23	-.23
5					1	-.35	.08	-.46	.03	.23	.56	-.44
6						1	.09	-.29	-.22	.06	-.08	-.11
7							1	-.62	-.14	.31	.37	-.31
8								1	-.19	-.68	-.58	.62
9									1	-.07	-.02	-.95
10										1	.44	-.45
11											1	-.29
12												1

TABLE V2 : PRODUCT-MOMENT CORRELATION COEFFICIENTS BETWEEN THE TWELVE
PERSONALITY VARIABLES INCLUDED IN THE STUDY.

The correlation between ~~En~~traversion and Neuroticism, although not significant, is much higher than that reported by Eysenck. Extraverts appear to ^{be} more Economically minded and less religious. Neuroticism seems to be positively correlated with Aesthetic value, social value and Radicalism, but negatively correlated with Religious value and Tendermindedness. Among the six values, it is found that Aesthetic value is negatively related to Economic and Religious values and to Tendermindedness and positively correlated with the Theoretical value and Radicalism. Economic value also presents negative correlations with the religious and social values. Political value is negatively correlated with Religious value and Tendermindedness and positively with Theoretical value and Radicalism. On the other hand, religious value produced highly negative correlations with theoretical value and Radicalism and equally high positive correlations with Tendermindedness. This high correlation lends some support to the argument of those critics who have tried to identify Eysenck's T-dimension with the Religionism dimension found by Ferguson (Anastasi, 1958). Theoretical value is also highly and positively correlated with Radicalism and negatively with Tendermindedness.

The significantly negative correlation between Radicalism and Tendermindedness is however too large to justify the factorial independence of the two dimensions as claimed by Eysenck.

2. Measures of Social Perception :- It will be remembered from the ~~third~~ chapter that our study consisted of asking the S_s to make predictions for two different categories of others, namely, others in general and specific others. The first category was further divided into two types according to the sex of the "others in general", thus requiring predictions as to the probable responses of the majority of men and the majority of women to each of the items comprising the test battery. In a similar manner, the second task was subdivided into two, requiring the prediction of the responses of one specific individual who was well known to the predictor, and another individual who was not so well-known. The rationale behind this subdivision of the field was discussed earlier and need not delay us here. In the following pages each of these four types of social perception will be considered separately, emphasis being equally divided between a description of the phenomenological properties of the emerging picture and the accuracy

of the results of perception or prediction.

A. Social perception in terms of predicting the responses of the majority of men: The answer sheets filled for this purpose were scored in the same way as the answers of the subjects themselves, thus providing, for each individual, ten scores for the ten dimensions discussed above. Figures $V_3 - V_4$ summarize the means of the predictions made for the majority of men for groups I and II separately. The numerical values of these are summarized in the following table (Table V_3). In each case the actual means obtained by men of each group are plotted against the values as predicted by men and women of the same group.

Looking at these figures, one cannot help being impressed by the amount of variation observed between the actual and predicted means. Equally impressive is the high degree of consistency demonstrated by men and women of the two groups in making their predictions on various dimensions. Thus, both men and women grossly underestimate men's mean on certain dimensions and over-estimate it on certain other dimensions. There appears to be also a striking consistency between men and women of both groups in terms of the direction and volume of deviation from the obtained mean on various dimensions. As to the direction

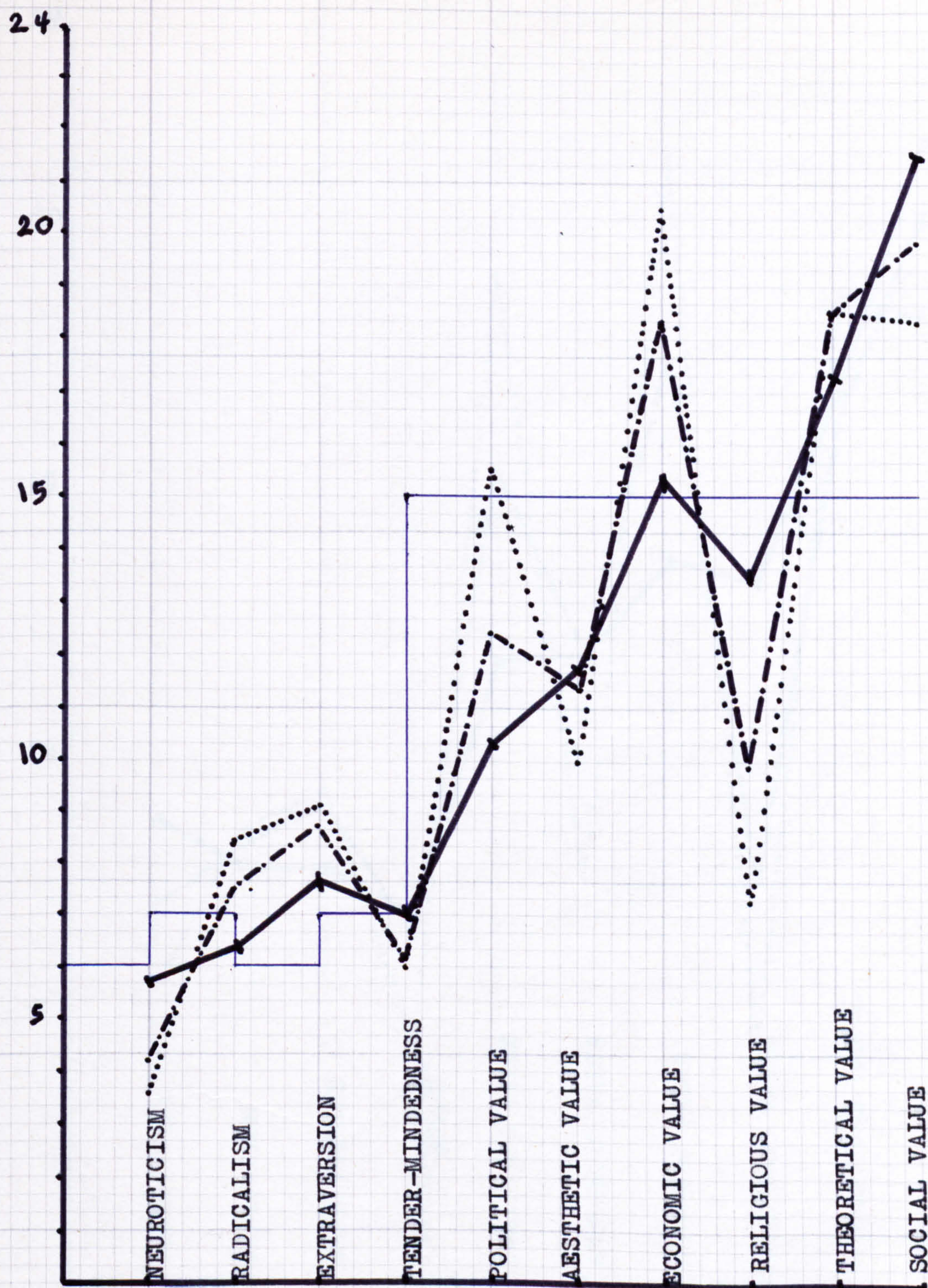


FIGURE V3 : MEANS OF MEN'S SCORES ON VARIOUS DIMENSIONS AND THEIR PREDICTED VALUES

GROUP I : MEN'S ACTUAL MEANS: —————
 AS PREDICTED BY MEN : - - - - -
 AS PREDICTED BY WOMEN :

Variables -											
Group I, N=20	E	N	Aes	Eco.	Pol.	Rel.	Soc.	The.	Rad.	Tend.	
As predicted											
by Women : N=37)	Mean	9.2	3.6	10.1	20.5	15.2	7.3	18.3	18.5	8.4	6.05
	S.D.	2.04	3.2	4.11	3.48	4.66	4.78	4.1	3.32	2.18	2.54
As predicted											
by Men N=18)	Mean	8.8	4.1	11.2	18.3	12.4	9.8	19.9	18.4	7.5	6.16
	S.D.	2.2	3	2.9	4.35	3.6	4.7	4.6	3.15	2	2.17
Men's Own											
Scores N=20)	Mean	7.65	5.7	11.8	15.3	10.45	13.7	21.5	17.25	6.3	7
	S.D.	2.97	3.34	4.8	4	3.7	8.67	2.24	3.37	3.21	2.66
Mean of I-II											
Group II		7.84	7.31	11.9	14.5	11.2	13.5	21.7	17.1	7.17	7
As predicted											
by Women N=16	Mean	9.4	5.62	7.7	21.6	19.2	4.37	18.3	18.9	8.56	4.5
	S.D.	2.37	3.62	4.9	7.6	7.16	8.6	4.1	3.06	1.19	2.9
As predicted											
by Men, N=11)	Mean	9.09	7.18	12	17.7	15.5	7.7	20.5	16.5	8.26	6.55
	S.D.	2.18	2.9	3.1	4.1	3.5	5.4	3.59	2.2	1.36	1.18
Men's own											
scores, N=22)	Mean	8	8.8	12	13.8	11.9	13.3	21.9	17	7.96	7
	S.D.	2.7	2.4	4.83	3.1	4.72	9.4	3.77	3.85	2.72	2.83

TABLE V3 : MEANS AND STANDARD DEVIATIONS OF MEN'S SCORES AS
PREDICTED BY OTHERS.

of deviation, there is almost a one-to-one agreement between men and women of the two groups. Thus, both men and women have underestimated men's standing on the dimensions of Neuroticism, Tender-mindedness, Aesthetic value, Religious value and social value. In the same way, both groups have overestimated the standing of men on the dimensions of Radicalism, Extroversion, political Economic and Theoretical value. The only inconsistency is between the predictions of men and women of the second group on theoretical value where men have slightly underestimated the mean standing of other men.

To provide a numerical index of this consistency, it is possible to rank-order means of men on various variables as predicted by men and women of the two groups and to determine the degree of agreement between these means by Kendall's Coefficient of Concordance , \mathcal{W} . Following table summarizes the result of such rank-ordering.* The first four rows represent the ranked

* See Table V4, P. 274.

Variables: Ranked Means as:		Neu.	Rad.	Ext.	Ten.	Pol.	Aes.	Eco.	Rel.	The.	Soc.,
Predicted by Group I	Women	1	4	5	2	7	6	10	3	9	8
	Men	1	3	4	2	7	6	8	5	9	10
Predicted by Group II	Women	3	5	6	2	9	4	10	1	8	7
	Men	2	4	5	1	7	6	9	3	8	10
Obtained by Men of Group I		1	2	4	3	5	6	8	7	9	10
Obtained by Men of Group II		4	2	3	1	5	6	7	8	9	10
Obtained by Men of Groups I&II Together		3	2	4	1	5	6	8	7	9	10
Mean of Rows 1 - 4		1.75	4	5	1.75	7.5	5.5	9.25	3	8.5	8.75

TABLE V4 :

positions of each variable as predicted by women and men of the two groups separately. The last row gives the means of these four rows. Rows 5, 6 and 7 represent the rank ordering of the same data as provided by the original scores of men of the two groups separately as well as their combined means. It should be realized that because of different measures, with different means and standard deviations, employed in gauging the four personality dimensions and the six value orientations the rank orderings presented above are of no other significance than to illustrate the consistency between different groups as to the relative prominence or trend of the variables involved.

By definition, the coefficient of concordance is

$$W = \frac{\text{Sum of squares between columns}}{\text{Total sum of squares.}}$$

Now, it can be shown that in an m by n table of ranks - where m represents the number of judges and n the number of objects judged or ranked - the sum of squares between columns equals

$$\text{Between} = \frac{\sum_1^n (\sum_1^m x)^2}{m} - \frac{mn(n+1)^2}{4}$$

and the total sum of squares is: Total $\frac{m(n^3-n)}{12}$

Calculating for the data of Table V_4 , the total sum of

squares is found to be 330 and the sum of squares between columns equals 305.5. This gives a value of $W = .925$ which is significant at much beyond .01 level. This amounts to an average rank correlation coefficient of .9 which is also significant at much beyond .01 level. This is exactly equal to the rank correlation between the means of the men of the two groups. That is to say, the agreement among the predictions of the four groups of men and women as to the relative standing of men on our ten variables is as high as the agreement between the two groups of men actually involved in this investigation. However, when the pooled ranks of the predictions (row 8) are correlated with the pooled ranks of the two groups of men (row 3) the index of relationship comes down to .785 which, although highly significant, is smaller than both the correlation between the ranked means of men and their predicted values.

This high degree of consistency among different groups of predictors can be taken as an indication that these predictions are based on something more than haphazard allocation of responses. Further evidence comes from the fact that all over-estimations and under-estimations are in the right direction as indicated by

studies concerned with the standardization of the measures employed. The question arises whether the means of these predictions can be regarded as representing the same population as the means of our two male samples. This can be approached by an ordinary normal test of the significance of the difference between the means of each sample and the means of the predictions. As some of the variances are not homogeneous and the number of the predictors and predictee on whom the means are based are not the same, so t is calculated according to the following formula:

$$t = \frac{\bar{X}_1 - \bar{X}_2}{\sqrt{\frac{S_1^2}{N_1} + \frac{S_2^2}{N_2}}}$$

In the case of predictions made by men themselves - of the means of men - or, later on, by women themselves - as both means are produced by the same subjects and thus are likely to be correlated, the formula has to take account of this correlation. The following formula was used for this purpose:

$$t = \frac{\bar{X}_1 - \bar{X}_2}{Sd / \sqrt{N}}$$

in which Sd represents the estimate of the population

standard deviation of the differences between paired observations and N stands for the number of such paired observations. For the first formula the value of t significant at .05 (t_1) or .01 (t_2) level is determined by finding the corresponding value of the t for N_1 and N_2 separately and combining them according to:

$$t_{.05} = \frac{(SE_1^2)(t_1) + (SE_2^2)(t_2)}{SE_1^2 + SE_2^2}$$

(Edwards, 1954, 273-275). Using this formula, we find that differences between the means of men's original scores and women's predictions of the same are significant on the variables of E ($t = 2.09$), N ($t = 2.28$); Economic value ($t = 5$), Political value ($t = 4.26$), Religious value ($t = 3.6$), social value ($t = 3.8$) and Radicalism ($t = 2.66$) and insignificant on the variables of Aesthetic value, Theoretical value and Tendermindedness for the first group.

For the second group, the differences between the original means of men and their predictions by women are significant on the following variables: Neuroticism ($t = 3.08$), Aesthetic value ($t = 2.69$), Economic value ($t = 3.9$), Political value ($t = 3.63$), Religious value ($t = 3.04$), social value ($t = 2.77$), Radicalism ($t = 2.9$)

and tender-mindedness ($t = 8.4$), Differences on the variables of Extroversion and the theoretical value fall short of significance at any established level.

Coming to the differences between the men's original means and their own predictions of the same, following variables produce significant results for the first group and the rest fall short of any recognized level of statistical significance: Ex ($t = 2.14$, $df = 17$), N ($t = 2.46$), Econ. value ($t = 3.9$), Pol. value ($t = 2.58$), social value ($t = 2.76$) and Radicalism ($t = 2.04$).

For the second group of men, the difference between the original and predicted means of the following variables are significant: Neuroticism ($t = 2.44$, $df = 10$) Economic value ($t = 3.2$), Political value ($t = 3.5$), Religious value ($t = 2.55$) and Social value ($t = 2.3$). The remaining differences are insignificant.

The conclusion to be derived from these data is that while both men and women under study demonstrate an impressively consistent awareness as to the probable direction and relative prominence of the mean response of men in general, their predictions fail to coincide with the actual mean responses of such random sample of male population as our two groups may represent. Of course, the small size of our two samples and lack of proper

sampling techniques in their selection puts severe restrictions on the interpretation of these observations. Yet, within certain limits, this generalization seems to be tenable and well in line with general expectation as borne out by studies of social stereotypes and categorical thinking. As was earlier argued, the aim of such categories and stereotypes is to simplify the stimulus field facing the individual. Simplification usually means generalization and more or less oversimplification and does not necessarily bear any one-to-one relationship to the verities of the objective environment. In terms of our earlier argument, human minds seem to be quite capable in estimating the probabilistic texture of their environment but, to this end, they often have to make some sacrifices in terms of precision and exactitude. In our zeal to predict what goes with what, we tend to overlook the concomittant question of how far or to what extent.

In support of the above contention, it is interesting to note that in both groups men's predictions of the responses of an average man of their own sub-cultural background shows the same kinds of significant differences with their own responses as women's predictions of the same and in the same direction. Still, a perusal

of figures IV_3 & IV_4 shows that in both instances men's predictions are closer to their real means than women's predictions. This can be taken as an indication of men's superior empathic ability and as such will be discussed later on. Another possible interpretation is that, men being better versed in the general preferences of their own sex, and possessing an ever-ready yardstick of their own selves, need less over-simplification than women. In other words, men seem to have based their predictions on somewhat different - and more or less lower-base lines than women- a base line nearer to their own responses. In this respect it is interesting to note that there appears to be some difference between the two groups of men in terms of the base lines or frames of reference adopted. Thus, for example, men of group I who average just under six on Neuroticism make predictions on the same dimension which average just over four. Whereas, men of group II who average just under nine on the same dimension predict the mean of other men in general to be just over seven. In other words, those who are more neurotic themselves may tend to see their species as more neurotic than they actually are but less neurotic than themselves.

B. Prediction of Women's Responses: Table IV₅ summarizes the means of women on the ten variables as predicted by men and women and actually obtained by women themselves, for the two groups of this study separately. The same results are graphically presented in Figures IV₅ - IV₆. A comparison of these two figures with figures IV₃ - IV₄ above reveals that both men and women tend to show less variation in predicting the stereotyped responses of women than they showed in predicting the responses of men. This is particularly true in the case of the Group I. This observation can be accounted for in various ways. The most plausible explanation seems to lie in the fact that human societies, more or less universally, have placed more emphasis on the cultural norms of behaviour for women than for men. In almost all human communities women seem to be subjected to much stricter patterns of role-behaviour than men. Biological periodicities and likelihoods have, no doubt, had something to do with this. Allport's (1954b) ingroup-outgroup theory of prejudice and stereotype formation may also have had something to do with this prejudiced position of our "better halves." The preponderance of stereotype cliches and jokes concerning various aspects of women's conduct bears witness

Variables		E	N	Aes.	Eco.	Pol.	Rel.	Soc.	The.	Rad.	Tend.
Group I, N =37											
As predicted by Women, N=36	Mean	6.8	6.9	12.5	14.8	9.1	14.9	23.8	14.5	6.6	9.1
	S.D.	2.9	3.05	5.33	3.65	3.24	5.13	3.78	3.94	2.47	1.95
As predicted by Men, N=19	Mean	6.9	7.8	12.8	13.3	10.1	15.7	22.4	15.7	6.4	8.94
	S.D.	2.94	3.34	3.90	3.32	3.95	4.91	3.5	3.09	2.22	2.62
Women's own scores (N= 37)	Mean	6.27	5	11.2	14	9.6	15.8	22.3	17.1	6.4	8.65
	S.D.	2.93	2.42	4.32	4.83	3.73	8.35	3.71	3.65	2.89	2.33
Mean of I-II Group II, N=27		6.97	6.57	11.2	12.6	9.9	16.1	23	17.3	6.57	8.57
As predicted by Women, N=16	Mean	5.56	9.9	13.7	12.1	8.65	15.9	25.8	13.8	6.25	8.75
	S.D.	3.7	2.2	3.7	3.13	3.5	4.56	3.06	3.56	1.87	1.5
As predicted by Men, N=11	Mean	5.36	9.46	14.6	12.9	9.9	18.5	21.8	12.3	5	8.36
	S.D.	3.18	3	4.36	4.1	3.18	4.6	3.46	5.27	2.36	1.27
Women's own scores N=27	Mean	7.9	8.7	11.3	10.7	10.3	16.4	24	17.2	6.8	8.4
	S.D.	2.41	3.2	4.47	2.88	3.64	9.14	3.27	3.3	2.35	2.57

TABLE V5 : MEANS AND STANDARD DEVIATIONS OF WOMENS ORIGINAL AND
PREDICTED SCORES ON THE TEN VARIABLES.

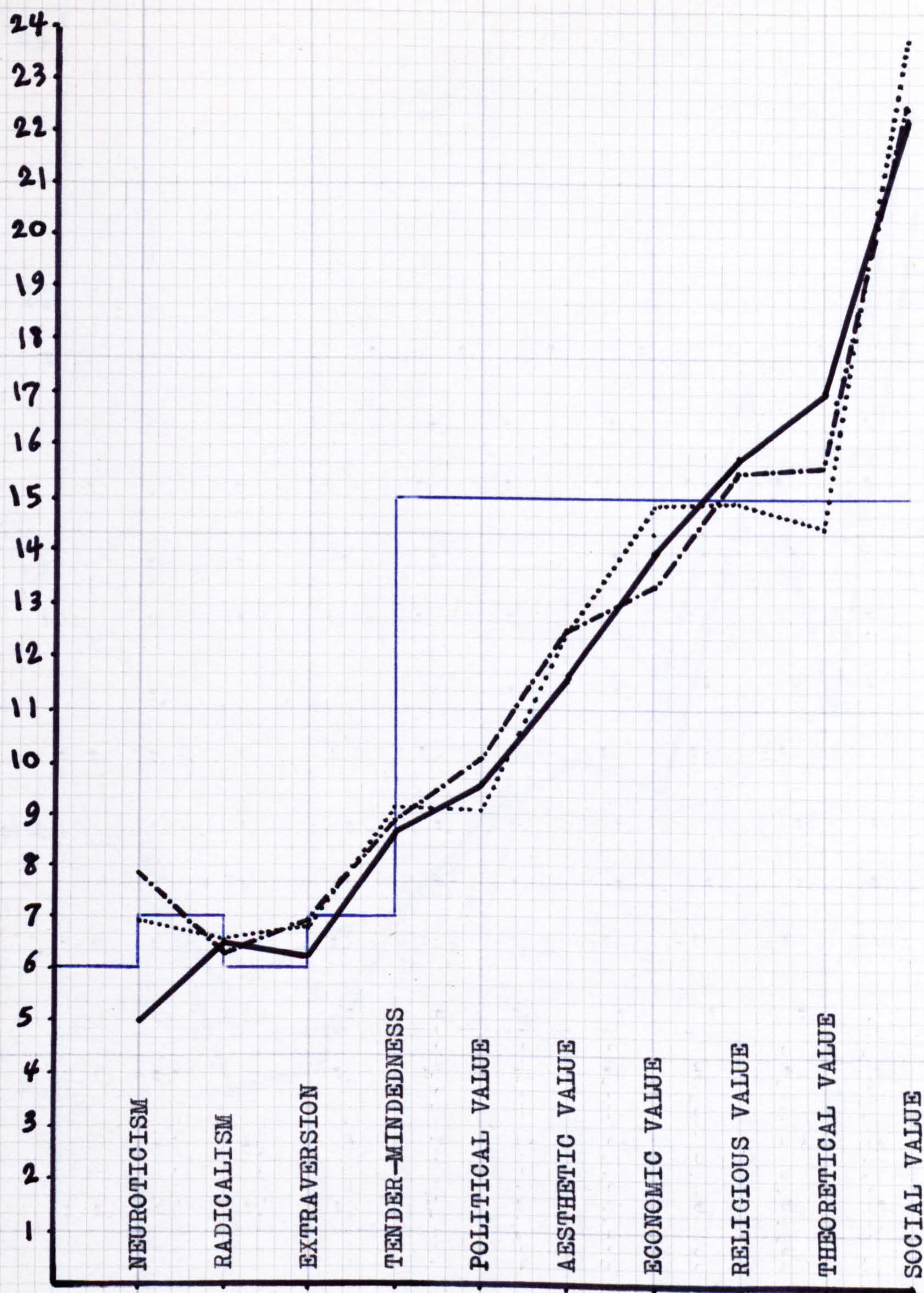


FIGURE V5 : MEANS OF WOMEN'S SCORES ON VARIOUS DIMENSIONS AND THEIR PREDICTED VALUES.

WOMEN'S ACTUAL MEANS: —————
 GROUP I : AS PREDICTED BY MEN: - - - - -
 AS PREDICTED BY WOMEN:

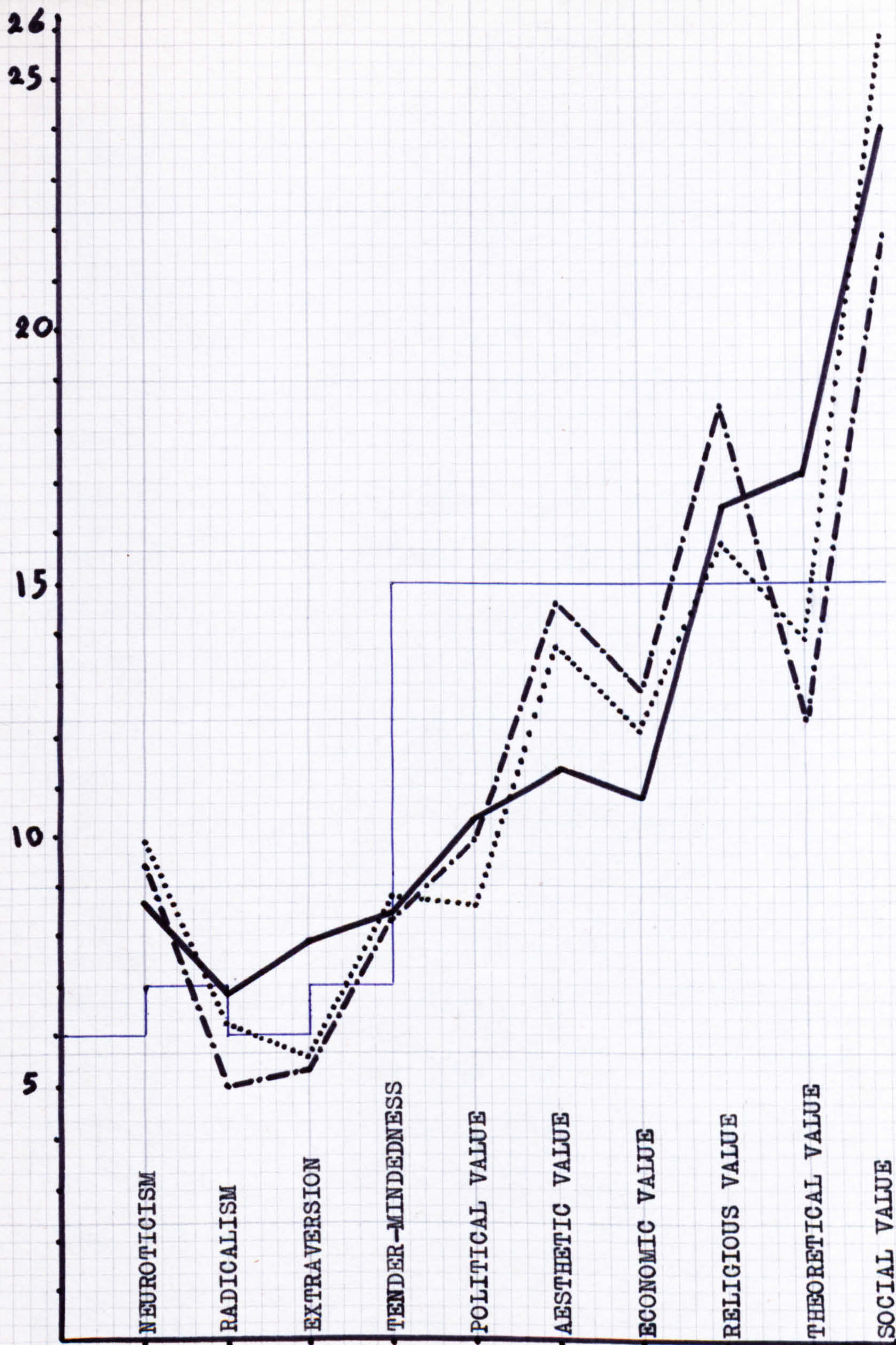


FIGURE V6 : MEANS OF WOMEN'S SCORES ON VARIOUS DIMENSIONS AND THEIR PREDICTED VALUES.

GROUP II : WOMEN'S ACTUAL MEANS : —————
 WOMEN'S MEANS AS PREDICTED BY MEN: - - - - -
 WOMEN'S MEANS AS PREDICTED BY WOMEN:

to this hypothesis. But the apparent closeness between the original and predicted scores should not be allowed to hide the fact that the amount of agreement in terms of the direction of deviations between different groups of predictors in predicting women's responses is in fact much less than that observed in connection with the prediction of men's responses. While in the case of men only one pair of predictors differed in the sign of deviation, i.e. men of group II underestimated men's standing on the theoretical value while all other three groups had overestimated it, in women's case five out of the twenty pairs of predictions made by men and women of the two groups point in opposite directions. In other words, while men of group I overestimate women's position on Economic value and underestimate it on the Political value, women do the reverse. In the same manner, men have overestimated women's position on the religious value and underestimated it on social value and tender-mindedness, whereas women predictors have done the opposite. Comparing the two groups together, it is observed that both men and women of group I have overestimated women's scores on the dimension of extraversion but both women and men of group II have underestimated it, doing so,

interestingly enough, despite their own very high position on the same dimension.

Nevertheless, there is a very high degree of consistency between the four groups of predictions in terms of the relative prominence of different measures. This consistency is reflected in a Kendall Coefficient of .948 which is very highly significant. The rank correlation coefficient equivalent of this agreement for the groups of original scores amounts to .99 which is also highly significant.

Considering the volume of differences between the actual and predicted values of various measures, it is found that, for group I, only the difference between the predictions made by men and the actual scores of women on Neuroticism is significant. ($t = 2.24$). For the second group, significant differences between men's predictions and women's actual responses are found on Extraversion ($t = 2.4$) and the theoretical value ($t = 2.86$) at between .05 and .01 level and on Radicalism, Aesthetic and social values between .1 and .05 level of significance (t being 2.07, 2.11 and 1.86 respectively). For women of group I differences between actual and predicted means (i.e. predicted by women) are more or less significant on

Neuroticism ($t = 4.2$), Aesthetic ($t = 2.1$, $df = 36$), Social ($t = 3.75$) and the Theoretical value ($t = 10.7$) and for women of group II the differences between actual and predicted values of Extraversion ($t = 3.4$, $df = 15$), Political ($t = 3.6$), Aesthetic ($t = 4.2$), Economic ($t = 2.84$) and Theoretical value ($t = 3.47$) can be regarded as significant.

A further point of interest that emerges from figures IV₅ and IV₆ is that in six out of ten cases in group I and in three cases in group II men's predictions for women are closer to women's actual means than women's own predictions. This is in contrast to the finding with respect to the predictions of men's responses where in all cases men's predictions were closer to their actual scores than women's predictions.

The difference between the two sexes in this respect can be tested by Fisher's Exact Probability Test (Siegel, 1956, 96 -104). If we represent mean predictions nearer to the actual means by a plus sign and those further away from the actual means by a minus sign and put the number of plus and minus signs obtained by men and women in a 2 x 2 contingency table we obtain the following table for predictions^{of} men's responses which is

the same for both groups I and II.

Men	A = 10	B = 0	10
Women	C = 0	D = 10	10
	10	10	20

From Finney's table of critical values for Fisher's test (Table I in Siegel) we find the difference to be significant beyond any accepted level of significance. For the difference between men and women in the case of predicting the responses of women, the following tables are produced:

Group I	Men	6	4	10
	Women	4	6	10
		10	10	20

Group II	Men	3	7	10
	Women	7	3	10
		10	10	20

None of the differences here, however, reach any level of significance.

C. Predicting Specific others' responses - In this section of the test subjects were required to fill in the test battery from the point of view of two specific individuals in their immediate environment, one of whom they knew well and one whom they did not know well. In this way it was hoped to have a measure of the influence of acquaintance on the accuracy of social perception. The first interesting point in analysing this part of the data is the tendency for both men and women to choose more of their own sex for the category of "best-known other" and more of the opposite sex for the category of the "least-known other". The following table summarizes this tendency.

Choosers	Chosen	Best Known		Least Known		Total
		Men	Women	Men	Women	
Group I	Men	8	4	3	9	24
	Women	3	23	14	12	52
Group II	Men	19	2	7	14	42
	Women	5	22	16	11	54
Total		35	51	40	46	172

A X^2 test for the whole sample shows that the trend in the case of the best-known other is highly significant

($\chi^2 = 39.2$) whereas the trend on the criterion of least-known other ($\chi^2 = 6.08$) is significant just over .02 level. That is to say, there seems to be a significant tendency among both men and women to choose their best known friends from among their own-sex acquaintances. Another interesting observation is the relatively high proportion of mutual choices on the criterion of best known other. This amounts to $\frac{24}{38} = .63$ in the first group and to $\frac{28}{48} = .58$ in the second group. In view of the fact that each subject was allowed only one choice, and, particularly in the case of group I, many choices could not be reciprocated because some of the choices went to subjects who were not present at the time of testing, this proportion is quite high and significantly higher than what would happen on pure chance level. The distribution of the number of choices is also indicative of a sociometric situation, with a considerable number of subjects receiving no mention and others being mentioned by 2 or three people. The proportion of reciprocal choices on the criterion of least-known other is zero in the first group and only $6/48 = .125$ in the second group.

In view of the above mentioned tendency to choose one's best-known acquaintance from among his or her own sex and one's least-known object of prediction from among the members of the opposite sex, it is apparent that some allowance must be made for the factor of sex in interpreting the results.

Table IV₆ summarizes the means of predictions made by the men and women of the two groups under study for the best-known and the least-known individual separately. The same data are graphically presented in figures IV₇ - IV₁₀. Here the total mean of the group's actual scores is also plotted to make the comparison between actual and predicted responses readily possible. But, as the predictions are only for part of the group and the actual mean is based upon the group as a whole, the comparison between the two means must not be interpreted too freely.

Considering Figure IV₇ and IV₉ - the means of predictions for the best known other - we find that men and women are in agreement in overestimating the means of their "best-known others" on the variables of Radicalism Extraversion, Political and economic value in Group I, and only on the Economic value in Group II; they agree in underestimating the position of their subjects on the variables of Social value (Group I) and on Neuroticism,

MEANS ON : AS PREDICTED BY:	EXT.	NEU.	AES. VAL.	ECO. VAL.	POL. VAL.	REL. VAL.	SOC. VAL.	THE. VAL.	RAD.	TEN.
MEN for the B.K.O.	7	7.6	10	18.3	10.2	11.3	20.4	19.8	6.9	7.1
MEN for the L.K.O.	5.8	5	12.2	13.5	6.9	19	18.7	17.1	5.8	9.4
GROUP I										
WOMEN for the B.K.O.	8	4.9	11.7	14.4	10.4	15	20.6	16.8	8.1	8.5
WOMEN for the L.K.O.	7.6	4.4	13.7	15.7	13.9	10.2	18.8	17.4	8.2	7.9
GROUP II:										
MEN for the B.K.O.	7.2	8.3	11.7	13.4	10.6	13.5	21.4	15.4	7.5	7.2
MEN for the L.K.O.	6.5	8.3	13.3	11.6	9.7	15.3	20.2	15.7	6	7.4
WOMEN for the B.K.O.	7.4	8.5	11.4	13.8	10	16.3	21.9	16.5	7.3	8.5
WOMEN for the L.K.O.	6.1	7.1	13	14.8	13.3	10.9	21.4	16.6	8	7.0

TABLE V6 : Means of predictions for the Best-Known (B.K.O) and Least-Known Other (L.K.O.).

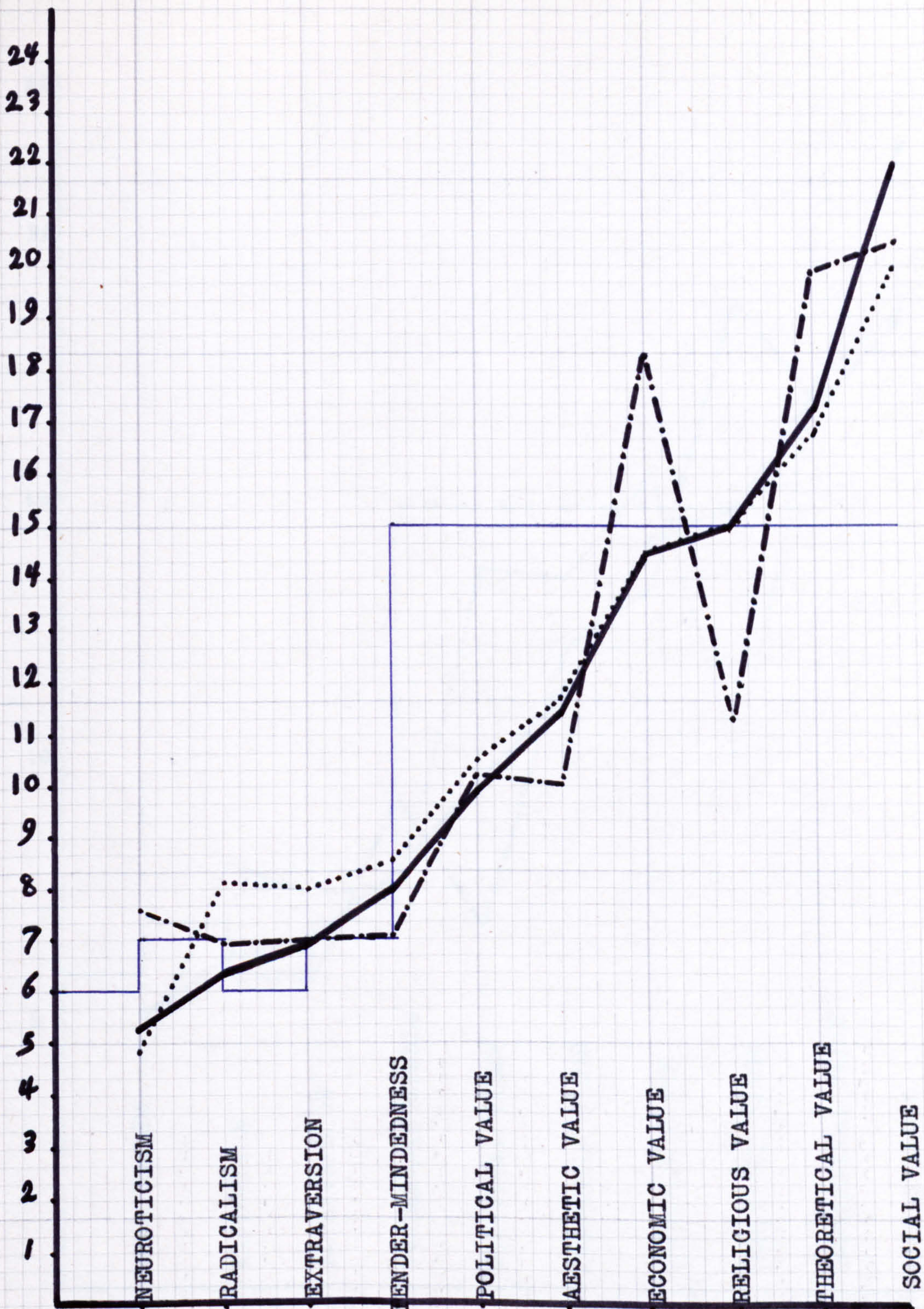


FIGURE V7 : PREDICTED MEANS OF THE BEST-KNOWN OTHER ON VARIOUS MEDIA OF PREDICTION.

MEN'S PREDICTIONS
 GROUP I: WOMEN'S PREDICTIONS
 ACTUAL MEANS OF THE GROUP ———

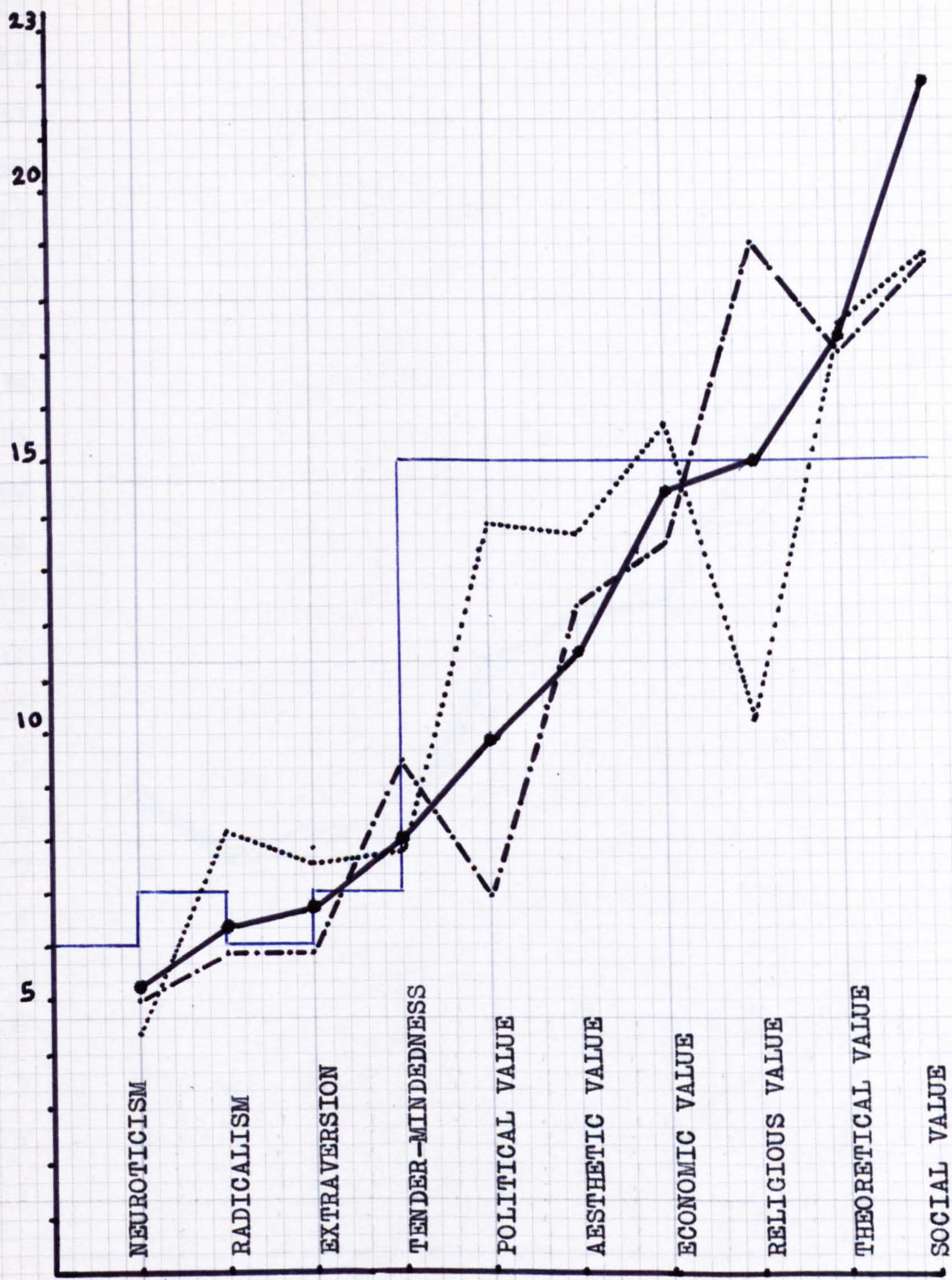


FIGURE V 8: PREDICTED MEANS OF THE LEAST KNOWN OTHER.

GROUP I
 MEN'S PREDICTIONS
 WOMEN'S PREDICTIONS
 ACTUAL MEANS OF THE GROUP —————

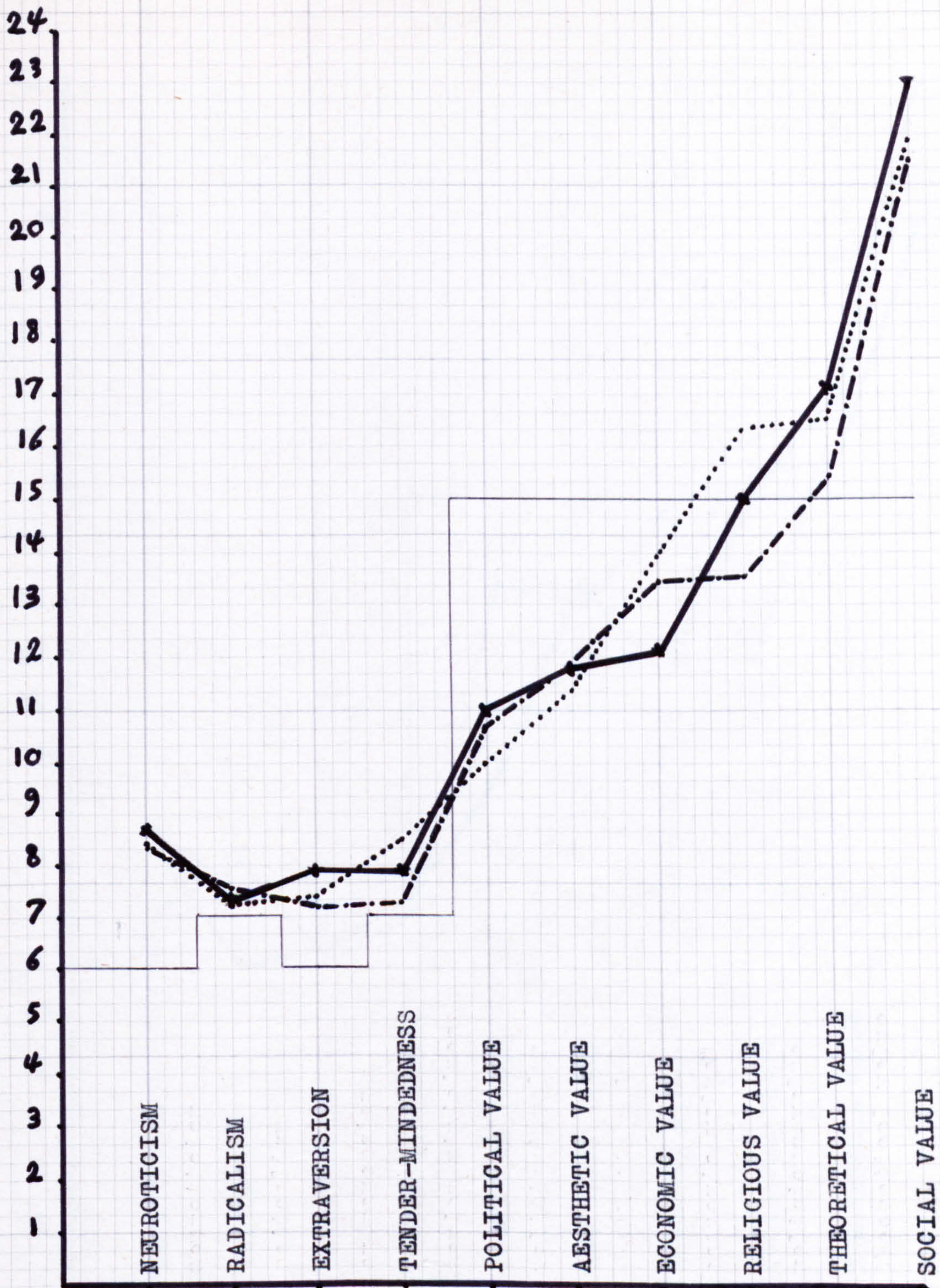


FIGURE V9 : MEANS OF THE PREDICTIONS FOR THE BEST-KNOWN OTHER.

AS PREDICTED BY MEN : ---·---·---·---·---·---·---·---·---·---

GROUP II : AS PREDICTED BY WOMEN:

ACTUAL MEANS OF THE GROUP: —·—·—·—·—·—·—·—·—·—



GROUP II : WOMEN'S PREDICTIONS

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Extraversion, Political, Aesthetic, Theoretical and Social value in Group II. On other variables they disagree. Thus, while men of Group I see their best-known friends as more neurotic than their whole sample, women see them as less neurotic, while^{wo}men think of their best-known friends as above average on tendermindness and aesthetic value and as under-average on theoretical value, men see their friends as above average on theoretical value. Similarly, in Group II, men regard their "best-known others" as under-average on religious value and tendermindedness, but women consider their "best-known others" to be above-average. On the rest of the variables men and women are in agreement as to the direction of the deviation of their estimates from the group mean. Almost all these over-estimations and under-estimations are in line with the expectation derived from a consideration of the sex of the majority of the others in question. That is to say, the same general tendency which was observed in connection with the prediction of the responses of others in general is also present here. But the predictions made for the best-known other show little of the jagged graphs of the predictions made for others in general. Instead, both predictions made by men and women lie very close to each other and to the

actual mean of the respective group. The agreement is particularly striking in the case of Group II, Figure IV₉, where none of the differences between the two predicted means - with the possible exception of that on religious value - or the differences between either of them and the actual mean of the group are large enough to be significant. This is in glaring contrast to this group's predictions for others in general as depicted in Figs. IV₄ and IV₆. In the case of Group I, Fig. IV₇, the line representing women's predictions lies very close to that representing the actual mean of the group, so that none of the differences between the two means can be suspected of being significant. Of the differences between the two predicted means, only those on Neuroticism and Economic, Religious and Theoretical value differ from the actual values by an amount approaching a significant level. Regarding the prediction of the least-known others' responses, Figs. IV₈ and IV₁₀, we are faced with a much more jagged graph and with much larger differences between the predictions of men and women. Again Group II presents a much smoother graph and much smaller differences both between the two classes of predictions and with the actual scores of the group. Here both men and women regard their least-known friend as under-

average on Neuroticism, Extraversion, Tendermindedness and Theoretical and Social values and above average on Aesthetic value. On the other hand, men think of their least-known friend as above average on Religious value and under-average on Radicalism, Political value and Economic value. Of the differences between the predictions of men and women only those on Religious, Political and Economic values and perhaps that on Radicalism, approach significance. In group I, men see their least-known friends as under-average on Neuroticism, Radicalism, Extroversion, Political value, Economic value and social value, whereas women under-estimate their least known predictee on Neuroticism, Religious value and social value. In a similar manner, men think of their least-known colleagues as above average on tendermindedness, aesthetic value and religious value, while women regard them as above average on radicalism, extroversion, political value, aesthetic value and economic value. Here the differences between the predictions of men and the actual means of the group on the variables of Religious value, Social value and possibly Political value are significant. For women, significant differences are obtained on Religious value, social value, political value and possibly on Radicalism and Aesthetic value.

To sum up this section, it appears that subjects show much more ability in predicting the responses of their well-known friends than of their less-known acquaintances. Moreover, they seem to deviate little from the mean of their group in predicting the responses of well-known others. In other words, while keeping in line with general expectation as to the prevalent response trend of each category, they resist being swayed away by such over-generalizations as were observed in the case of predicting the responses of others in general. This seems to be due to the fact that in predicting the responses of specific others subjects tend to base their guesses on the observation of individual cases rather than the subjective probability of the response concerned, hence the closer resemblance between the predicted and obtained means of the group. This is in complete agreement with the conceptual analysis presented earlier in this study.

ACCURACY OF SOCIAL PERCEPTION

So far we have been dealing with the means of various groups over different kinds of predictions and have compared these means with the means of actual scores irrespective of individual differences. Now it is time to find out the degree of agreement between each individual prediction and its equivalent in terms of the actual responses of the category of others concerned.

This is done through expressing each prediction as a deviation from the original scores. Such deviation scores have been found very useful in various kinds of psychological research involving the comparison of test scores or profiles of one person with that of another person. Cronbach and Gleser (1953) have discussed the theoretical foundations of D-score and have enumerated its advantages over similar indices of profile similarity.

Considering only two persons, we have the set of X_1 for person 1 and the set of X_2 for person 2. Without placing any restriction upon our data, we may regard the X_1 and X_2 as the coordinates of two points P_1 and P_2 in a K-dimensional space. Now, the more similar the measures of two individuals the closer will their points

lie in the K-dimensional space, and conversely, the further apart the points the more dissimilar are the corresponding measurements. In this case, as we are comparing an estimate of a score against its true value, the similarity between the two can be taken as an index of the accuracy of the estimated measure. Accordingly we define the accuracy of a prediction as the linear distance between the respective points of the actual measurement and the estimates. Technically speaking, if we represent the two variables by orthogonal axes, the distance D between any two points may be easily obtained by use of the generalized Pythagorean rule: $D_{12}^2 = \sum (x_1 - x_2)^2$. D^2 can be used directly as a measure of similarity between the two scores or as an index of accuracy. In most cases, however, it is preferable to obtain D, since the larger differences between persons are much exaggerated in squaring. D is less skewed than D^2 but is not normally distributed (Cronbach and Gleser, 1953, 459).

For the above reason we employed D rather than D^2 . Four sets of ten D scores were derived for each individual by comparing his predictions against the means of the men and women in his group and the actual

responses of the two specific individuals for whom he had made predictions. From the point of view of the accuracy of social perception the sign of D was irrelevant, because it made little psychological sense whether one achieved a score above or below the criterion of accuracy. So the sign difference was disregarded. Obviously the larger the size of D the less the amount of accuracy. D is in fact a measure of inaccuracy rather than accuracy and should be interpreted as such.

Having found the values of D for the four types of social perception the means of D-scores were calculated separately for each of the two groups involved as well as the men and women of each group separately. These values are presented in Table below.¶

¶ See Table V7, P. 305.

TABLE V7 : MEANS .O.F. DEVIATION SCORES ON VARIOUS MEASURES FOR MEN

AND WOMEN OF THE TWO STUDIED GROUPS SEPARATELY. (Numbers in paranthesis represent the percentage of error)

		Ext	Neu	Rad	Ten	Aes	Eco	Pol	Rel	Soc	The	Sum
MEN OF GROUP I	Men in	2	3	2.4	2	2.1	4.2	3.2	5.5	3.6	3	31.6
	General	(17)	(25)	(17)	(14)	(7)	(14)	(11)	(18)	(12)	(10)	
	Women in	2.2	3.6	1.7	2.1	3.6	2.7	3.3	4.2	3.1	2.7	28.1
	General	(19)	(30)	(12)	(15)	(12)	(9)	(11)	(14)	(10)	(9)	
	Best-Known	3.2	4.8	2	3.6	3.8	5.8	4	8.9	3.6	3.4	43.2
	Other	(27)	(40)	(14)	(26)	(13)	(19)	(13)	(30)	(12)	(11)	
	Least-Known	3.4	2.9	4	3.2	3.4	3	5.2	8	2.8	4.1	40
	Other	(28)	(24)	(29)	(23)	(12)	(10)	(17)	(27)	(9)	(14)	
WOMEN OF GROUP I	Men in	2.2	3.4	2.6	2.1	3.5	5.5	5.3	7.6	4.2	2.9	39
	General	(18)	(28)	(19)	(15)	(12)	(19)	(18)	(25)	(14)	(10)	
	Women in	2.3	3	1.7	1.6	3.2	3	3	4.4	3.5	3.8	29.3
	General	(19)	(25)	(12)	(12)	(11)	(10)	(10)	(15)	(12)	(13)	
	Best-Known	3.2	3	2.1	2.7	3.6	3.2	3.9	6.8	4.9	3.2	36.5
	Other	(27)	(25)	(15)	(19)	(12)	(11)	(13)	(23)	(16)	(11)	
	Least-Known	3.1	3.8	3	2.9	5.7	4.2	5.6	7.6	5.6	3.8	45.4
	Other	(26)	(32)	(21)	(21)	(19)	(14)	(19)	(25)	(19)	(13)	
MEN OF GROUP II	Men in	2.2	2.9	1.4	1.2	3.1	4.1	3.5	5.4	3.6	2.2	29.5
	General	(18)	(24)	(10)	(8)	(10)	(14)	(12)	(18)	(12)	(16)	
	Women in	3.2	3	2.4	1.3	4.4	4.1	3.2	4.6	3.5	5.3	34.8
	General	(26)	(25)	(17)	(9)	(15)	(14)	(11)	(15)	(12)	(17)	
	Best Known	1.8	2.9	2.4	2.6	4.3	2.3	4.1	4.3	4.4	2.8	31.8
	Other	(15)	(24)	(17)	(19)	(14)	(8)	(14)	(15)	(15)	(9)	
	Least Known	2.9	3.6	2.2	2.8	6.3	4.2	5.2	5.6	5.4	3.4	41.6
	Other	(24)	(30)	(16)	(20)	(21)	(14)	(17)	(19)	(18)	(11)	
WOMEN OF GROUP II	Men in	2.4	3.6	1.2	2.9	4.9	7.6	7.2	8.6	4.1	3	45.5
	General	(20)	(30)	(8)	(21)	(16)	(25)	(24)	(29)	(14)	(10)	
	Women in	3.4	2.2	1.9	1.5	3.7	3.1	3.5	4.6	3	3.6	30.8
	General	(31)	(18)	(13)	(11)	(12)	(10)	(12)	(15)	(10)	(12)	
	Best-Known	3.1	3.2	2.2	2.2	3.2	3.6	3.6	4.9	3.7	3	32.6
	Other	(26)	(27)	(16)	(15)	(11)	(12)	(12)	(16)	(12)	(10)	
	Least-Known	3	2.9	2.3	2	5.3	5	4.4	5.4	4.9	3.8	39.0
	Other	(25)	(24)	(16)	(14)	(18)	(17)	(15)	(18)	(17)	(13)	
Mean of all 16 rows		2.7	3.2	2.2	2.3	4	4.1	4.2	6.0	4	3.4	36.2
		(23)	(27)	(16)	(16)	(13)	(14)	(14)	(20)	(13)	(11)	

The means and standard deviations of D-scores on different media of prediction and for different kinds of predictees for the group as a whole are given in the following table.

		E	N	Ac	Ec	Po	Re	So	Th	Rad	Ten	Sum ^{of} all Ten
Women in general	M	2.75	2.92	3.26	3.24	3.30	4.27	3.22	3.90	1.75	1.69	30.28
	SD	2.07	1.82	2.59	2.53	2.21	2.92	2.18	2.91	1.53	1.19	8.75
Men in general	M	2.18	3.25	3.51	5.56	5.16	7.31	3.88	2.93	2.01	2.06	37.75
	SD	1.49	2.07	2.76	3.42	3.43	3.32	2.51	1.92	1.62	1.57	10.86
Best known other	M	2.88	3.13	3.81	3.69	3.70	6.30	4.10	3.21	2.12	2.57	35.51
	SD	2.19	2.41	2.64	2.64	2.49	5.20	3.39	3.05	1.84	1.66	12.39
Least known other	M	3.09	3.35	5.02	4.22	5.44	6.41	5.06	3.89	2.75	2.76	41.97
	SD	2.10	2.36	3.06	2.90	3.45	5.45	3.40	2.72	2.06	1.56	12.25

Table V_g: Means and S.Ds of D-scores on various media of prediction and for different types of others for the group as a whole.

Now, because of the variation in the possible range of error in our three test forms the values of D given above are not directly comparable. The whole range of our measure of E and N was 12 whereas each of our value-scales could vary from 0 to 30. Obviously a D-score of

say 2 derived from these two tests can not be regarded as equal. To make them comparable we must convert them into a ratio of the possible range of error or deviation existing for each test. The numbers in paranthesis under each D-score in Table V₇ show these ratios.

V₇ & V₈

Looking at Tables, two consistent trends emerge. In the first place it is easily seen that the sizes and ratios of deviation scores vary from one medium of prediction to the other. In other words, subjects do not show the same proportion of error in making predictions on all of the ten media of judgement involved. In the second place the sizes of D scores seem to vary with the kind of predictee concerned.

Judging by the last row of Table V₇, which gives the mean of D-scores over all ten variables, it seems that the four groups of men and women studied here have produced the smallest amount of error in predicting the responses of others in the area covered by our theoretical value scale. Conversely, they have shown the largest amount of error in making predictions in the response-area covered by our Neuroticism scale. Similarly, predictions in the area of social value have produced the second smallest ratio of D-score and those in

the area of Extraversion have resulted in the second largest ratio of error. Aesthetic value comes third in terms of the size of D and is followed by the Economic value, Political value, Radicalism, Tendermindedness and the Religious value.

This trend is also more or less true of the relative positions of the ten variables in each of the 16 rows of Table V7 . To gain a quantitative index of this trend, it is possible to rank the values of D-scores in each row (See Table V9) according to their sizes and to express the degree of agreement between different rows by a Rank Correlation Coefficient. A more efficient and time saving device, however, is Kendall's Coefficient of Concordance. Calculated separately for the four groups of predictors, the values of W, Coefficient of Concordance, vary all the way from .53 ($P < .05$) men of group II, to .76 women of group II. All these values of W are significant at .05 level and beyond. Thus within our four sub-groups, the ten dimensions of prediction tend to produce consistently high or low measures of error. For the group as a whole, i.e. for the 16 rows of Table ^{V9} the value of Coefficient of Concordance is found to be .85 ($P < .01$) which bespeaks

a very high degree of consistency indeed.

All in all, then, our three different media of prediction tend to occupy highly consistent positions in terms of the accuracy of predictions attempted on them. First comes the values test, closely followed by the Inventory of Social Attitudes and, not so closely, by the short Personality Questionnaire. The finding is well in line with the conceptual analysis presented in Chapter II. Values are basically products of social life and heavily dependent upon the cultural climate in which the individual finds himself. A great deal of formal and informal education consists of no more than the persistent inculcation of the basic values of the cultural group concerned. No wonder, then, that every individual should possess a clear picture of the relative prevalence of the value dimensions covered by the Test of Values. The only unexpected finding is the high value of D-scores observed in predicting the Religious Value. In terms of crude D-score this value has tended to produce the largest in almost every case. In other words, subjects have persistently tended to commit more error in predicting others' responses on this dimension than any other dimension. The main reason for this seems to lie in the large variance of

TABLE V9 : Rank-orderings of the predicted means according to their relative sizes.

MEDIA OF PREDICTION		F	N	RAD	TEN	AES	ECO	POL	REL	SOC	THE
GROUP I :											
MEN	Men in General	7	10	8	5	1	6	3	9	4	2
	Women in General	9	10	5.5	8	5.5	1.5	4	7	3	1.5
	Best-Known Other	8	10	5	7	3	6	4	9	2	1
	Least-Known Other	9	7	10	6	3	2	5	8	1	4
WOMEN	Men in General	6	10	8	4	2	7	5	9	3	1
	Women in General	9	10	6	5	3	1.5	1.5	8	4	7
	Best-Known Other	10	9	5	7	3	1	4	8	6	2
	Least-Known Other	9	10	7	6	5	2	3	8	4	1
GROUP II :											
MEN	Men in General	8.5	10	2	1	3	6	4	8.5	5	7
	Women in General	10	9	7	1	5	4	2	6	3	8
	Best-Known Other	5.5	10	8	9	4	1	3	5.5	7	2
	Least-Known Other	9	10	3	7	8	2	4	6	5	1
WOMEN	Men in General	5	10	1	6	4	8	7	9	3	2
	Women in General	10	9	7	3	6	2	4	8	1	5
	Best-Known Other	9	10	7	6	3	4	2	8	5	1
	Least-Known Other	10	9	4	2	7	6	3	8	5	1
TOTAL /16		9	10	6	7	3	4	5	8	2	1

of the religious value scores. It is apparent from the large size of the standard deviation going with the religious value - 8.52 for the whole group - that this particular dimension, or, in more precise terms, the verbal items representing this particular area, is not enjoying the same degree of group consensus as other value areas. The sheer size of its standard deviation is indicative how widely subjects differ in responding to verbal situations constituting this dimension.

The reason for this perhaps is that these situations or items do not convey the same meanings - connotative or denotative - for different individuals. They are not of the same cognitive or emotional significance for different perceivers. Naturally this variation in interpretation cannot be expected to stop short at the personal level. Subjects are apt to show a similar amount of disagreement in interpreting these statements from the point of view of others as well. Hence the observed large variation in predicted values of the religious value and the greater amount of error in making predictions on it. The higher amount of accuracy in making predictions on the Inventory of Social Attitudes is also well in line with the general expectation. The whole process of socialization, we

are told by social psychologists, is no more than a process of forming proper attitudes - that is, functional states of readiness to respond in a consistent manner - in relation to the norms or values of ones reference group (Sherif and Sherif, 1956). In acquiring attitudes we do not only learn how to react towards certain stimuli or stimulus situations but we also learn what to expect of others of our own cultural group in the face of a similar situation. We also learn the frequency of occurrence of each kind of response as well as the probability of social reward or punishment associated with each type of response. Putting this information together, then, it is quite easy to predict the most probable responses of each type of others to the verbal situations making the inventory of social attitudes.

Yet the inventory has produced less accuracy than the values test. This is due to the fact that not all items of the inventory possess the same degree of objectivity or transparency. Some items are of doubtful social consensus, like the items making up the Religious Value. Others are of a more or less controversial character and subject to the censorship of the perceptual defence mechanisms - both on the part of the predictor and the original respondent. All these

influences work in the direction of diminishing the amount of accuracy.

The amount of error associated with the short personality inventory is the largest of all. Items making up this inventory are more of a personal and subjective nature. The subjects seem to have had little chance of learning the relative prevalence of the behaviour sketches involved. The referrent of these sketches being the subjects' own selves, there appears to be little objective clues as to the probability of these being socially rewarded. The only possible clue is the social desirability of each item and of late most test designers have intentionally tried to reduce such clues. In the present inventory, items belonging to the dimension of Extraversion are, *prima facie*, of greater social desirability and this dimension has produced a smaller amount of error as compared with the dimension of Neuroticism.

Looking back at Table V₇ another trend becomes apparent: the amount of error varies with the kind of predictee involved. The last column of Table V₇ summarizes this trend. The same data are presented in the following table. By looking at this table it is possible to discern any consistent trend or tendency to be more or less accurate in terms of the referrent

Predictor \ Predicttee	Men in General	Women in General	Best- known other	Least known other
Group I Men	31.6 ²	28.1 ¹	43.2 ⁴	40 ³
Group I Women	39.4 ³	29.3 ¹	36.5 ²	45.4 ⁴
Group II Men	29.5 ¹	34.8 ³	31.8 ²	41.6 ⁴
Group II Women	45.5 ⁴	30.8 ¹	32.6 ²	39 ³
Mean overall 4 groups	36.5	30.75	36	41.5

Table V10 : Sum of D. scores over the ten measures for each type of other.

of perception.

Thus men of group I tend to score lowest in predicting the responses of women in general, that is, they show superior ability in this respect, and to score highest, that is to prove less able in predicting the responses of their best-known friend! Their ability to predict the responses of men in general and those of their least-known acquaintances come second and third respectively. This is both in contrast to common-sense expectation and to the behaviour of the other three groups.

All the remaining three groups achieve the lowest mean D-score-and hence the highest accuracy score-in predicting the responses of their own-sex, others-in-general, the second lowest mean error score in predicting the responses of their best-known individual other and the third lowest D-score in forecasting the responses of the opposite-sex-others-in-general. The lowest amount of accuracy is demonstrated in the case of predicting the responses of the least known-other.

The only exception in this general trend is observed in the case of the women of Group II who have fared better in predicting the responses of their least known other than their opposite-sex others-in-general. The agreement between the last three groups is represented

by a Coefficient of Concordance , $W = .91$ that is significant at .05 level. Regarding the combined ranks of all four groups, the value of W sinks to .49 which is not significant because of the small number of ranks involved.

Regarding the group as a whole predictions for the majority of women have resulted in the smallest value of D-scores (30.75). This is due to the preponderance of women in the group as a whole. It may also be due to the fact, observed by Dymand (1950) that women in general are easier to empathize with.

The significance of the differences between the D-scores for various types of predictees can be tested by a sign test. For this purpose the D-scores of each subject for the four kinds of predictees are compared against each other and the difference is represented by a minus or plus sign according to the direction of difference from the first-chosen variable of each pair. Where the differences are 0 half of them are assigned a plus sign and half a minus sign. If there is no difference in the performance of the group under the two different conditions, then the probability that $X_1 > X_2$ will be equal to the probability that $X_2 < X_1$, or $\frac{1}{2}$.

Thus, if this null hypothesis is true, we should expect the number of plus signs to be approximately equal to the number of minus signs for our pairs of observations. If we have too many plus or too many minus signs, we shall reject the null hypothesis.

The null hypothesis may be evaluated in terms of the binomial distribution $(P + Q)^n$, where $P=Q=.5$, and n is equal to the number of pairs of observations. However, if there is at least 10 pairs of observations, we may make an approximate test by first finding the mean and standard deviation of the binomial distribution as given by the formulae $M = NP$ and $\sigma = \sqrt{NPQ}$ respectively. Then the value of z can be obtained by the formula $z = \frac{X - M}{\sigma}$ where X is the observed frequency of plus or minus signs, whichever is the larger. The null hypothesis will be rejected at the 5 per cent level if the obtained value of z is equal to or greater than 1.96. The result of the test is summarised in the following table.^X

^X In this table : D_w = D-scores in predicting the responses of women; D_m = D-scores in predicting the responses of men in general; D_{bk} = D-scores in predicting the responses of the best-known other, and D_{lk} = D-scores in predicting the responses of the least-known other.

	Σ Dw- Σ Dm	Σ Dw- Σ Dbk	Σ Dw- Σ Dlk	Σ Dm- Σ Dbk	Σ Dm- Σ Dlk	Σ Dbk- Σ Dlk	
Group I	Σ + 15 Σ - 41 z= 3.48	11 30 2.59	10 31 2.88	16 24 1	15 25 1.28	12 28 2.16	
Group II	Σ + 7 Σ - 19 z= 2.1	12 14 .019	9 18 1.73	19 7 2.1	12 14 .019	13 36 3.29	
The Whole Sample	Σ + 21 Σ - 60 z= 5.64	23 44 2.42	19 49 3.63	35 31 .24	27 39 1.21	25 64 4.0	

It is apparent from this table that both groups have shown significantly higher sensitivity and hence lower D-scores in predicting the responses of women than the responses of men or the responses of the less known specific other. The same significant difference is observed between the D-scores relating to the well-known and the unknown others' responses. The well-known others have elicited significantly higher accuracy than the unknown others. But the two groups differ as to the difference between the accuracy in predicting the responses of women and those of the best-known other. Only the first group demonstrates a significant difference in favour of women's responses. The overall result

for the sample as a whole is also significant. Exactly the same is true of the differences between the D-scores in predicting women's responses and the responses of the least-known other. On the other hand, the difference between the D-scores in predicting men's responses and those in predicting the best-known other's responses is significant for the second but not for the first group or the sample as a whole. None of the differences between the D-scores for men and the least known other are significant.

GENERALITY OF ACCURACY SCORES-

As was pointed out in Chapter I, the question of the generality or specificity of the ability under study has been investigated by various workers, but with inconsistent results. The question is whether subjects show the same degree of accuracy or inaccuracy in predicting the responses of various kinds of others facing various types of situations. In the present study, the hypothesis of generality will be accepted if the D-scores of subjects show a consistent tendency to vary with each other. This tendency may be expected to be of two main types. Subjects may demonstrate similar D-scores in predicting the responses of one type of other on various media of prediction; or they may, at least, show some consistency in their error scores from one kind or other to another. These two kinds of generality may be called within-other and between-other generality. The first kind pertains to the ability to predict the different response tendencies of one individual - or one class of individuals - and the second type applies to the capacity to predict the responses of different individuals - or different categories of individuals - over one or more of the media

of prediction. Still a third kind of generality may be obtained if subjects reveal a tendency to be more or less accurate on any particular medium of prediction irrespective of the other whose response is to be predicted.

On the basis of the findings of previous studies - as reviewed in Chapter I - one would expect to find a fair degree of consistency between the two principal types of predictions employed in this study, namely between the D-scores in predicting the responses of men and women in general and those in predicting the responses of the two specific individuals respectively. Our conceptual analysis of the process of prediction and the different clues utilized therefor, casts some doubt on this possibility. There are also other confounding factors working against such an expectation, the most important of these being the sex differences between the two kinds of specific predictees. As will be remembered, our subjects showed an overwhelming preference to choose as their best-known predictee one of their own sex and vice versa for the category of least-known other. If there be any tendency to be better - that is, more accurate - in predicting the responses of one type of others-in-general, it is quite natural that

this should be reflected in the accuracy of making predictions for one of the two types of specific others.

To investigate the hypothesis of generality, product moment correlations were run among D-scores on each of the ten media of prediction and for each of the four types of others. This produced a 40 by 40 correlation matrix. To this was added 12 other variables comprising the sums of D-scores and plus and minus signs on each task. These signs were indicative of whether a subject had under-estimated or over-estimated the responses of others. The burden of correlating all these variables was undertaken by the University of London Atlas Computer. The resulting correlation matrix is presented in the following four tables, each table representing correlations among D-scores achieved on one of the four tasks. For an N of 67 (df = 65) only values of r equal to .24 could be regarded as significant at .05 level. These r's are indicated by underlining in the text of the tables.

As suggested above, the distribution of D-scores is known to deviate from normality. This may cast some doubt as to the justifiability of employing product moment correlation coefficient in this respect. The t test for r assumes normality and homoscedasticity either for the vertical array or for the horizontal array

distribution. Nothing is assumed about the total X and Y distributions. But, as McNemar (1962, p.138) has suggested, there is evidence, as with the t test for means, that sizable violations of these assumptions are tolerable. (See also Kendall and Stuart, 1958)

A study of the correlation matrices shows that there is little consistency between the accuracy of social perception, that is, between the D₋ scores from one medium of prediction to another. This means that our subjects do not appear to reveal the same degree of acumen and sensitivity in predicting the various aspects of the responses of another individual or of a category of others.

Of the 78 correlation coefficients in the first table which represent the generality in making accurate or inaccurate predictions for women in general, only 17 (i.e. 22%) are significant at .05 level or above. Eight of these significant r's represent the correlation between each of the individual D₋ scores and their sum total over all ten media. Eight of the ten correlations thus produced are significant and, as expected, positive. Their sizes are also relatively impressive, varying all the way from .55 to .23 with a median value of .42. This amount of positive relationship, however, is more or less expected in view of the contribution each

	1	2	3	4	5	6	7	8	9	10	11	12	13	
	Ext.	Neu.	Aes.	Eco.	Pol.	Rel.	Soc.	The.	Rad.	Ten.	Sum	Sum	Sum	
											1-10	-	+	
1	1	.06	.05	-.13	.14	.15	.19	-.07	.11	-.02	.35	.34	-.14	
2		1	-.11	-.17	-.14	-.21	.09	.19	.08	-.01	.14	-.18	.07	
3			1	.02	.07	.34	.11	.21	.08	.13	.55	.34	-.20	
4				1	.04	.19	.14	.01	-.21	.25	.34	.02	-.04	
5					1	.16	.24	.00	.14	-.01	.42	.18	-.01	
6						1	.04	.01	.04	.02	.54	.22	-.19	
7							1	.05	.07	.06	.50	.29	.01	
8								1	.08	-.06	.44	-.08	.05	
9									1	-.10	.24	.23	-.04	
10										1	.23	-.11	.25	
11											1	.33	-.11	
12												1	-.78	
13														1

TABLE V11: CORRELATION COEFFICIENTS BETWEEN THE D-SCORES ON VARIOUS MEDIA OF PREDICTION IN PREDICTING THE RESPONSES OF WOMEN IN GENERAL.

D-score makes to the total D. As $\sum_{i=1}^{10} D_i = D_1 + D_2 + \dots + D_{10}$, it is obvious that those who score high on any individual D should also score proportionally high on the total D-score. Thus some measure of artificial correlation is inevitable. This is, however, also true of the reliability coefficient based upon internal consistency method, i.e. upon the correlation between each item and the scale as a whole.

Six of the remaining significant correlations are produced by the two sums of plus and minus signs. Thus, those who have produced a larger number of minus signs, that is, those who have consistently underestimated other women's positions, also tend to produce larger D_r scores - i.e. show less accuracy- in forecasting their responses on the dimensions of extraversion, aesthetic value and social value. Consequently, their sum of D. scores is also proportionally larger.

A similar, albeit non-significant, correlation is observed between the sum of minus signs over all ten variables and D.-scores on Radicalism, Religious Value, Political Value and - conversely - Neuroticism.

Two of the remaining significant correlations are between the sum of plus signs, i.e. overestimations - and D_r scores on Tender-mindedness and the sum of the minus signs respectively. This means that those who

tend to over-estimate the responses of others show significantly - although slightly - less ability in predicting their responses on the Tender-mindedness scale. The highly significant negative correlation between the sum of plus and minus signs, although very impressive in size, is of little psychological significance. The number of plus and minus signs being dependent upon each other ($\Sigma+ + \Sigma- = 10$), it is obvious that the two should be negatively correlated.

Of the 45 correlations between the D. scores pertaining to the ten individual media of prediction, only those for the Aesthetic and Religious Value ($r = .34$), Economic Value and Tender-mindedness ($r = .25$) and between Political and social Value ($r = .24$) reach the .05 level of significance.

Six other correlations ranging in size from .19 to .21, fall between .1 and .05 levels of significance. These are between D. scores on Extraversion and Social Value ($r = .19$), Neuroticism and Religious Value ($r = -.21$), Neuroticism and Theoretical Value ($r = .19$), Aesthetic and Theoretical Values ($r = .21$), Economic and Religious Values ($r = .19$) and Economic Value and Radicalism ($r = -.21$). The same is true of the correlations between the D. scores on Tender-mindedness

and the total D-score ($r = .23$), between the sum of minus signs and D.scores on Neuroticism ($r = -.18$), Political Value ($r = .18$), Religious Value ($r = .22$) and Radicalism ($r = .23$); and between the sum of plus signs and the D.scores on Aesthetic Value ($r = -.20$) and Religious Value ($r = -.19$).

In short, then, only three of the forty-five correlations between the various measures of accuracy in predicting women's responses can be regarded as significant. This amount of significant correlation, about 6.7%, can easily be expected to occur on pure chance level and has little bearing on the hypothesis of generality. Moreover, 12 of the 45 correlations (i.e. about 27%) are negative in sign and harshly challenge any suspicion of generality. So, the obvious conclusion is that although, as reported above, our subjects show every sign of a non-chance ability to predict the potential responses of the majority of women on our ten dimensions of personality, they present little evidence of a general ability to predict the responses of women in general. In fine, as far as this part of our study is concerned, no support is lent to the hypothesis of inter-media generality.

Going to Table V₁₂, the correlation coefficients between the D.-scores in predicting the responses of men in general - we find that 26 of the 78 correlations are significant at .05 level or above. Seven more correlations, ranging from .18 to .23 can be regarded as significant between .1. and .05 levels.

As in the previous table, the bulk of the significant correlations is produced by the sum of D.-scores and each of the individual D.-scores. Seventy per cent of these are significant at above .01 level. This attests to a considerably high degree of relationship between accuracy of perception on the ten media of prediction as a whole and that on each of the individual media. Here again, however, the relationship is vitiated by the artifacts noted above and very hard to interpret.

Second major source of significant correlations is the sum of minus signs, i.e. the number of underestimated cases out of ten media of prediction. This is positively and significantly related to D.-scores on the Aesthetic Value ($r = .24$), Economic Value ($r = .34$), Political Value ($r = .34$), Tender-mindedness ($r = .36$) and the sum of all D.-scores ($r = .36$). It is also relatively highly - though insignificantly - related to D. scores on Neuroticism ($r = .20$).

	1 E	2 N	3 AES.	4 ECO.	5 POL.	6 REL.	7 SOC.	8 THE.	9 RAD.	10 TEND.	11 Sum 1-10	12 sum -	13 sum +
1	-	<u>-.24</u>	.06	.08	.08	.02	-.05	-.10	-.12	.03	.12	.12	.03
2		-	-.02	<u>.29</u>	.07	.18	-.15	.20	.03	-.06	<u>.32</u>	.20	-.08
3			-	<u>.24</u>	<u>.49</u>	-.08	.10	.03	-.16	-.01	<u>.46</u>	<u>.24</u>	-.13
4				-	<u>.34</u>	<u>.32</u>	<u>.29</u>	.11	-.21	<u>.24</u>	<u>.73</u>	<u>.34</u>	<u>-.25</u>
5					-	<u>.27</u>	<u>.40</u>	-.09	-.07	.19	<u>.73</u>	<u>.34</u>	-.23
6						-	-.11	.11	.13	.17	<u>.54</u>	-.15	<u>.32</u>
7							-	.06	-.09	.17	<u>.41</u>	.08	-.15
8								-	.16	.01	<u>.27</u>	.03	.15
9									-	-.11	.02	.06	.11
10										-	<u>.35</u>	<u>.36</u>	-.18
11											-	<u>.36</u>	-.12
12												-	<u>-.75</u>
13													-

TABLE V₁₂ : CORRELATIONS BETWEEN ACCURACY SCORES ON THE TEN MEDIA OF
PREDICTION IN PREDICTING THE RESPONSES OF MEN-IN-GENERAL.

In the third place stands the sum of plus signs - i.e., the total number of overestimated cases - which is negatively correlated with the sum of minus signs ($r = -.75$), D₋ scores on Economic value ($r = -.25$) and, nonsignificantly, with Political value ($r = -.23$) and Tender-mindedness ($r = -.18$). It is positively correlated with D₋ scores on the Religious value ($r = .32$).

Out of the 45 correlations produced by the individual D₋ scores on the ten media of prediction, only ten are significant at .05 level or above. Thus the error score on the Economic value is positively related to those on the Aesthetic value ($r = .24$), Political value ($r = .34$), Religious value ($r = .32$), Social value ($r = .29$) and Tender-mindedness ($r = .24$), and negatively - though nonsignificantly - correlated with that on Radicalism ($r = -.21$). This means that those individuals who show higher sensitivity in predicting other men's responses on the Economic value scale tend to show less sensitivity in predicting their responses on the Radicalism scale. Accuracy - or inaccuracy - on the Political value is significantly correlated with accuracy in predicting men's positions on the Aesthetic ($r = .43$) Religious ($r = .27$) and Social ($r = .40$) value scales and to some nonsignificant extent on Tender-mindedness

scale ($r = .19$). On the other hand, accuracy in predicting men's responses on the Neuroticism scale is negatively correlated to that on the Extraversion scale ($r = -.24$) and positively to that on the Economic value ($r = .29$) and, nonsignificantly, to those on the Religious ($r = .18$) and Theoretical values ($r = .20$). The rest of the correlations are too meagre to deserve any consideration.

These results fall far short of supporting any hypothesis of generality in predicting men's responses. Only nine of the 45 correlations between the ten D-scores are significant and in the expected direction. Sixteen of the remaining r 's are in the opposite direction. Although only one of these is significant, their sheer number runs counter to any assumption of generality. The conclusion, then, is that although our subjects demonstrated an above-chance accuracy in predicting the responses of men in general on the ten dimensions or media of prediction - as judged from the size and direction of their deviations of the observed norms of men - yet they revealed little consistency or generality in making predictions over different media.

In the case of the error-scores in predicting the responses of a well-known other, Table V₁₃ , it

	1	2	3	4	5	6	7	8	9	10	11	12	13
	E	N	Aes	Eco	Pol	Rel	Soc	Theo	Rad	Tend	Sum of 1-10	Sum -	Sum of +
1	-	.14	.03	-.02	-.01	.20	-.04	.01	.00	.05	<u>.29</u>	<u>.26</u>	.02
2		-	-.18	.06	-.01	.08	.07	<u>.25</u>	.09	.13	<u>.33</u>	.21	.17
3			-	.20	.18	.23	.07	.22	-.09	-.00	<u>.42</u>	.21	.04
4				-	-.23	.08	.15	-.02	-.13	.16	<u>.29</u>	.08	<u>.29</u>
5					-	.21	.19	.16	.12	-.04	<u>.38</u>	.09	.01
6						-	-.08	<u>.53</u>	.16	<u>.40</u>	<u>.77</u>	.15	.10
7							-	.22	-.12	-.14	<u>.35</u>	-.19	.12
8								-	-.03	.05	<u>.66</u>	.01	.05
9									-	.17	.20	.17	.02
10										-	<u>.36</u>	<u>.34</u>	.15
11											-	<u>.25</u>	.22
12												-	<u>-.25</u>
13													-

TABLE V13 : CORRELATIONS BETWEEN ACCURACY SCORES ON THE TEN MEDIA OF
PREDICTION IN PREDICTING THE RESPONSES OF A WELL-KNOWN OTHER.

is observed that only 17 of the obtained values of r are significant at .05 level or above. Fifteen more correlations fall at between .1 and .05 levels of significance.

Here again nine out of the ten correlations between the individual D_- scores and their sum, and three of those between the individual D_- scores and the sum of minus signs - i.e. underestimated cases - are significant. Sum of the plus signs - i.e. number of over-estimated predictions - produced two significant correlations one positive and one negative.

But of the 45 correlations between the accuracy scores on ten different dimensions or media of prediction, only three are significant at .05 level or above. These are between the D_- scores on the Religious value and Theoretical value ($r = .53$), Religious Value and Tender-mindedness ($r = .40$) and Neuroticism and the Theoretical value ($r = .25$). Ten further r 's can be regarded as significant between .1 and .05 levels, two of these being negative. 13 of the remaining non-significant correlations are also negative. In other words, while only $\frac{1}{15}$ of the observed correlations significantly indicate in the direction of generality, $\frac{1}{3}$ of the correlations indicate in the opposite direction. The

evidence, thus, is in clear contradiction with any assumption of generality.

Exactly the same number of 17 significant correlations is obtained in the case of predicting the responses of an unknown other, Table V14, plus 14 more coefficients falling between .1 and .05 levels. Once again the bulk of the significant r 's is produced by the last three columns of the table, i.e., those representing the sums of all D_- scores, under-estimations and over-estimations respectively.

Of the 45 correlations between the ten individual measures of social perception, only those between D_- scores on Extraversion and Social value ($r = .35$), Neuroticism and Political value ($r = .37$), Economic value and Radicalism ($r = -.25$) and Political and Religious values ($r = .38$) are significant. Nine other correlations are significant between .1 and .05 levels. Three of these are negative. Thus there is little evidence of generality.

To sum up this discussion, then, there appears to be little consistency or generality among the accuracy scores of individuals over different media of prediction. All in all, just under 25 per cent of the obtained correlation coefficients are significant at .05 level or above. Of this proportion, however, about 40% is

	1	2	3	4	5	6	7	8	9	10	11	12	13
	E	N	Aes.	Eco.	Pol.	Rel.	Sol.	Theo.	Rad.	Tend.	Sum of I -10	Sum of 81	Sum of +of
I													
1	-	.05	-.19	.03	-.07	-.11	<u>.35</u>	-.05	.08	.10	.18	-.13	<u>.28</u>
2		-	.04	.08	<u>.37</u>	.10	.00	.02	.19	-.10	<u>.40</u>	<u>.27</u>	-.04
3			-	.18	.15	.21	-.01	-.20	.07	-.00	<u>.36</u>	.15	-.05
4				-	.04	.12	.00	.14	<u>-.25</u>	.07	<u>.36</u>	<u>.40</u>	<u>-.34</u>
5					-	<u>.38</u>	.12	-.09	.22	.07	<u>.61</u>	.10	.07
6						-	.14	.09	.09	.00	<u>.70</u>	-.00	.05
7							-	.15	-.19	.09	<u>.45</u>	-.23	<u>.31</u>
8								-	-.15	-.18	.21	<u>-.25</u>	.11
9									-	.19	.22	.09	.16
10										-	.18	.05	.08
11											-	.09	.14
12												-	<u>-.76</u>
13													-

TABLE V14 : CORRELATIONS BETWEEN ACCURACY OF PREDICTIONS ON THE TEN
MEDIA OF PREDICTION IN PREDICTING THE RESPONSES OF AN
UNKNOWN OTHER.

due to the sum of the plus signs or over-estimations. These two kinds of correlations are very difficult to interpret and at any rate can bear little on the hypothesis of generality. We are left with barely 26% of significant correlations that can legitimately be regarded as indicative of generality. This constitutes just over 11% of the actual correlations ($N=180$) between the deviation scores of our ten dimensions over the four types of predictees. Even this proportion of consistency would be considered more impressive or suggestive if it had shown any discernible trend or tendency. But as it appears from the tables, there is precious little sign of any consistent trend. The presence of a large proportion of negative correlations casts further doubt as to the generality of the ability under study.

The second question in connection with generality is whether people show the same degree of skill in making predictions for different categories of others. In other words, does a person who scores high in predicting the responses of men in general also score high in predicting the responses of women in general, or the responses of specific individuals.

Our original correlation matrix provided the necessary information on this point. But that matrix is too large and unwieldy to be presented here and provides little proof of generality. Of the 169 correlations between each D_{-} score on predicting women's responses and each D_{-} score in predicting men's responses 22 (or 13%) are above .23. The same ratio for the individual D_{-} scores on predicting the responses of the best known and the least known other are $^{14}/169$ (i.e. 8.3%) and $^{15}/169$ (i.e. 8.9%) respectively. Of the 169 correlations between individual accuracy scores on predicting men's responses and those pertaining to the prediction of the responses of the best-known and least known individuals, only $^{14}/169$ (i.e. 8%) are significant at .05. Corresponding ratio for the correlations between the individual D_{-} scores in predicting the responses of the two types of specific others is about 11.8% ($^{20}/169$). All in all, then, only 9.7% of the correlations thus produced can be regarded as significant. This is too small to justify the reproduction of the whole correlation matrix here. Yet, it is interesting to note that here again over 30% of the significant correlations are produced by the last three columns of the correlation matrix. This leaves us with a

proportion of significant correlations just over 6%. This ratio of significant results can easily occur on pure chance basis.

As a further evidence of the lack of correlation between the D_{-} scores of subjects on the four different kinds of predictees, it is sufficient to look at the correlations between the sums of D 's over the four types of others. In view of the significant correlations obtaining between these sums and their individual components, it is natural that any correlation among the individual measures of D should be reflected in the correlations among these total D_{-} scores. These correlations are set out in the table below.

ΣD on predicting:						
		1	2	3	4	
ΣD on predict- ing:	1	Men's responses	-	.10	-.19	-.07
	2	Women's res- ponses		-	.08	.14
	3	A best known other's responses			-	.27
	4	A least known other's responses				-

As is seen from the table, only one of the six correlation coefficients can be regarded as significant at .05 level and that is the r of .27 between the sum of D_{-} scores on predicting the responses of the two categories of specific others. The negative relationship between the total D_{-} scores on predicting Men's and the best known other's responses can also be regarded as significant at .1 level. The rest fail to reach any acceptable level of significance. Thus there is little evidence of generality over different kinds of predictees either.

In view of the known lack of normality of the distribution of the D_{-} scores - as suggested above - and the desirability of an assumption of normal distribution for Pearson's product moment correlation coefficient, it seems desirable to check the values of correlation obtained through that method against another technique of correlation which does not require any such assumption of normality. To this end, Phi correlations were calculated between the total D_{-} scores on the four types of predictions.

value of ϕ between the

This done, it is found that while the total D_{-} scores on predicting the responses of the two kinds of generalized others is only .013 ($N = 83$), that between the accuracy scores in predicting the responses of

the two specific others amounts to .20 which, with an $N = 90$, is barely significant at .05 level. This conclusion seems to corroborate the result of the product moment correlation. Of course, Phi is known to be an under-estimation of the r and thus the lower value of correlation obtained is not unexpected. When the combined D_{-} scores of the two kinds of generalised others are correlated with those of the specific others, Phi is found to be .119 which, with an N of 68 is not significant.

Thus, there is little evidence for regarding the two kinds of predictive achievement as ⁱⁿany way the same. There appears, however, to be some difference between our two groups as to the sign and size of this relationship. For the first group, the relationship is represented by a Phi of $-.002$, insignificantly small and negative. The same value for the second group is .331 which, with an $N = 27$, can be regarded as significant between .1 and .05 levels of significance. A similar difference is observed with regard to the correlation between the D_{-} scores in predicting men's and women's responses; though both groups produced completely insignificant -0 -order phi's, the signs of their correlations were different, the older group

giving positive correlation. The whole correlation table is presented below. As it shows, the values

Phi correlations between:				Sum of D-scores on predicting			
				1	2	3	4
Sum of D-scores in predicting	1	Men's responses	1		0.036	.074	.269
			11		-.038	.196	.045
	2	Women's responses	1			-.267	-.072
			11			.045	-.106
	3	A best-known other's responses	1				.219
			11				.183
	4	A least-known other's responses	1				
			11				

of Phi are too small to be significant. Again one third of the observed correlations are negative and defy any assumption of generality. This means that those who have done well in predicting the responses of one category of others will not necessarily do well in predicting the responses of another category of others and vice versa. Thus our finding not only does not bear out the view of social perception as a general ability applying equally in predicting the behaviour of others irrespective of the category of others involved or the type of behaviour to be predicted, it also casts some doubt on the findings

of those studies which have claimed two types of stereotype and individual sensitivity. Clearly, our results show little overlapping between the two kinds of predictive achievements as defined above. More impressive is the lack of any correlation between the accuracy in predicting the responses of the two kinds of others-in-general, or men and women.

PERSONALITY CORRELATES OF ACCURACY IN SOCIAL PERCEPTION

As suggested in Chapter 1, the personality correlates of judging ability have held a central position in the history of this area of psychology. Investigations of empathic ability have inherited this interest from their forebears. Dymond (1950) herself has carried out a detailed study of the personality correlates of her proposed empathic ability. After all, if empathy or social perception is as important an asset as its advocates would have us believe, its effects must be reflected in those recurring behaviour patterns or potentials which form the personality. Similarly, if empathic ability partakes of the same mental endowments or processes as the ordinary judging ability, then it should reveal the same kinds of relationship with personality traits as the former is reputed to have. (Taft, 1955).

One advantage of the media of prediction used in this study was that they represented a number of well-defined personality dimensions of obvious significance for interpersonal relations. Some of these dimensions have been shown to bear certain relationship to judging ability. Reviews of this field (Taft, 1955, Allport, 1961, Vernon, 1963) concur on the finding of a positive

relationship between Introversion - more or less in the sense used by Eysenck (1947) - and the ability to judge others; and a negative relationship between judging ability and Neuroticism or emotional instability. A positive relationship between empathic ability and adjustment - lack of Neurotic tendencies - has been claimed by many recent writers on empathy (Jahoda, 1958). In the new field of empathy, studies by Dymond (1950) and Cline (1955) have unearthed similar results. But the relationship between empathy and Introversion appears to be negative rather than positive. In Dymond's words:

"Those whose empathy is high (give a picture of themselves) as outgoing, optimistic, warm, emotional people who have a strong interest in others.....Those low in empathy are rather rigid, introverted people who are subject to outbursts of uncontrolled emotionality"
(Dymond, 1950, p.349)

In the case of social attitudes, if our measures are really measures of two basic attitudinal dimensions, two well-established and enduring ways of viewing the world around us, then they should play an important role in shaping our understanding of other people as well. Indeed there is some indirect evidence partially bearing on this relationship. A number of studies (Scodel and Mussen, 1953; Scodel and Freeman, 1956) has shown the authoritarian individuals to be lacking in empathic ability.

Eysenck (1954) has developed the argument that the authoritarian personality factor proposed by American psychologists is no more than an impure version of his tough-minded - tender-minded factor with those high in authoritarianism being high ^{has} on tough minded direction and conservatism. He also produced some experimental evidence in support of this argument.

The relationship between empathic ability and personal values has little been investigated. Yet if the values are of the basic significance attributed to them by Spranger, it is only natural that they should influence the process of perceiving or judging other human beings. What form this relationship should take is hard to predict. But, from findings of other studies on the influence of values in tachistoscopic perception (Brumer and Goodman, 1947) one can tentatively predict that those high on a value dimension should prove better in predicting other's responses on the same dimension or scale. With this information at hand we set out to explore the personality correlates of social perception through an analysis of the correlations between the four aspects of this ability and the ten dimensions of character under study.

The above mentioned correlation matrix included correlations between each of the ten variables of personality implied in our media of prediction and the accuracy or deviation score gained by each individual in predicting the responses of others on each of the same variables. This gave rise to a 528 entry correlation matrix. Of these, however, only a small proportion reached the .05 significance level.

Considering the sums of D-scores on the four different types of predictions, only political value ($r = .25$) was significantly correlated with accuracy in predicting women's responses. The positive value of r meant that those high on the political value showed less accuracy in predicting women's responses. On the other hand, Religious value appeared to be positively correlated to accuracy of this type of social perception at just under .05 level ($r = -.21$). Over-all accuracy in predicting men's responses is significantly correlated with the subjects' sex ($r = -.48$); that is men are significantly more accurate in this respect than women. There is also a slight negative correlation with Neuroticism ($r = -.20$) which indicates that the more neurotic individuals demonstrate higher accuracy in predicting the responses of other men. A similar - but significant -

correlation obtains between Neuroticism and accuracy of predicting the best-known other's responses ($r = -.28$). This same type of accuracy is negatively correlated with age ($r = .23$), Economic value ($r = .20$) and Tender-mindedness ($.19$) at .05 level or just below. Similar negative correlations are observed between the accuracy of perception in predicting the least-known other's responses and the variables of age ($r = .19$) and the Economic value ($r = .19$). A slightly positive correlation is observed with the social value ($r = -.21$). This indicates that people high on the social value are more accurate in predicting the responses of the least known other.

Regarding the correlations between individual D. scores and various measures of personality, it is found that sex (i.e., being a man) is negatively correlated to accuracy of perception in predicting women's Neuroticism scores ($r = .27$) and the least-known other's position on Radicalism ($r = .27$), while it is positively related to accuracy in predicting men's scores on the Aesthetic ($r = -.32$), Economic ($r = -.29$), political ($r = -.42$) and Religious values ($r = -.36$) and to accuracy in predicting the least known other's responses on the Economic value ($r = -.28$) and Social value ($r = -.34$) and to some extent to the prediction

of the best-known other's position on the Social value ($r = -.20$).

Age appears to be positively related to accuracy in predicting women's and men's Extraversion scores ($r = -.31$ and $-.27$ respectively) and negatively to accuracy in guessing men's scores on Radicalism ($r = .34$), the best-known other's score on the political ($r = .35$) and social values ($r = .29$) as well as the least known other's responses on the Social value ($r = .24$).

Extraversion produced more or less significantly negative correlations with accuracy in guessing women's Neuroticism scores ($r = .22$), men's scores on the Economic value ($r = .32$) and Tender-mindedness ($r = .26$), the best known other's score on the same ($r = .26$) and the least known other's Neuroticism ($r = .22$).

Similarly, Neuroticism proves to be negatively correlated with accuracy in predicting women's Extraversion scores ($r = .31$) and positively correlated with accuracy in predicting men's Radicalism scores ($r = -.26$), the best known other's Religious values ($r = -.23$) and the least known other's standing on the Neuroticism scale ($r = -.26$). More Aesthetically oriented people seem to be less accurate in predicting women's Radicalism ($r = .29$) and men's Neuroticism ($r = .24$), but are more

accurate in predicting men's responses on the Aesthetic ($r = -.21$) and Political values ($r = -.22$), the best-known other's Economic orientation ($r = -.32$) and the least-known other's Neuroticism ($r = -.21$) and Radicalism ($r = -.26$). On the other hand, people with higher Economic value show less accuracy in predicting women's responses on Neuroticism ($r = .23$), and Economic value ($r = .28$); men's responses on Economic value; their best-known other's Religious value ($r = .22$) as well as their least-known other's Political value ($r = .24$). In a similar manner, people scoring high on the Political value show less accuracy in predicting women's Extraversion scores ($r = .26$), Economic and Religious values ($r = .21$) and their best-known other's Radicalism ($r = .30$). They appear to be only slightly more accurate in guessing the Tender-mindedness of their best known other ($r = -.21$). People with high Religious value, however, tend to show higher accuracy in predicting women's scores on the Religious value ($r = -.22$); and men's scores on Neuroticism ($r = -.23$). They tend to be less accurate in predicting their best-known other's responses on the Aesthetic ($r = .22$) and Economic values ($r = .28$)

Those high on the Social value tend to be slightly less accurate in guessing women's Social value

scores ($r = .20$) and men's Extraversion ($r = .24$). They appear to be slightly better off in predicting their least-known other's responses on the Neuroticism ($r = -.20$) and the Religious value ($r = -.21$). Theoretical value presents more or less significantly negative correlations with accuracy in predicting women's Religious Value ($r = .23$), men's Neuroticism ($r = .20$), the best-known other's Extraversion ($r = .30$) and Social Value ($r = .20$) and the least-known other's Extraversion ($r = .22$) and Social Value ($r = .19$).

Radicalism is negatively correlated with accuracy in guessing women's Extraversion ($r = .20$) and Radicalism scores ($r = .25$) as well as the best-known other's Theoretical Value ($r = .21$), and with the least-known other's Aesthetic Value ($r = .26$). It is positively correlated with accuracy in predicting the best-known other's Economic Value ($r = -.27$) and Tender-mindedness ($r = -.23$). Tender-mindedness, on the other hand, appears to be positively correlated with accuracy in predicting men's Tender-mindedness ($r = -.20$), and negatively with accuracy in sensing the best-known other's Aesthetic ($r = .20$) and Economic Values ($r = .26$) and the least-known other's Radicalism ($r = .25$).

With a d.f. = 65, only values of $r = .24$ are significant at .05 level and the rest fall between .1 and .05 levels. The interpretation of these correlations is made more difficult by the absence of any consistent trend among the correlated factors. This can be taken as another indication of the lack of generality in the ability under investigation. If accuracy in predicting others' responses were a general ability, then it would be expected to produce consistently positive or negative correlations with some of the personality variables considered above. As the evidence stands, there is little indication of such a consistency.

In view of the lack of normality in the distribution of the D_{-} scores, it seemed reasonable to make a further analysis of the relationship between accuracy of social perception and the personality variables involved. For this purpose, the whole group was divided into three subgroups representing the top and bottom 25% and the middle 50% in terms of the accuracy in predicting the best-known other's responses. The choice of this particular index of accuracy was prompted by the observation earlier reported, that it produced higher correlations with other types of accuracy. The result of this three-fold classification is graphically represented in Fig. V11. The numerical values of the figure are given in Table V15.

	ΣD bk	ΣD lk	ΣD M	ΣD W	Age	I.Q.	Family Size	En.	Neu.	Aes.	Ec.	Pol.	Rel.	Soc.	The.	Rad.	Tem.
Top 25%	21.5	41.5	22.5	32.6	25	74.9	2.84	7.68	7.19	10.9	13.3	7.07	15.8	23.5	17.1	6.27	8.46
Middle 50%	33.9	39.3	38.9	29.5	24.8	71.0	2.5	6.85	5.36	11.96	13.4	11.63	15.9	22.0	17.0	6.9	7.72
Bottom 25%	50.07	46.8	38.5	29.5	24.7	60.4	2.54	8.23	6.23	10.8	13.4	10.25	11.8	22.5	17.6	7.04	8.09

Table IV.5 : Means of the three different ability groups - in terms of ability to predict on other's responses - on various measures of personality.

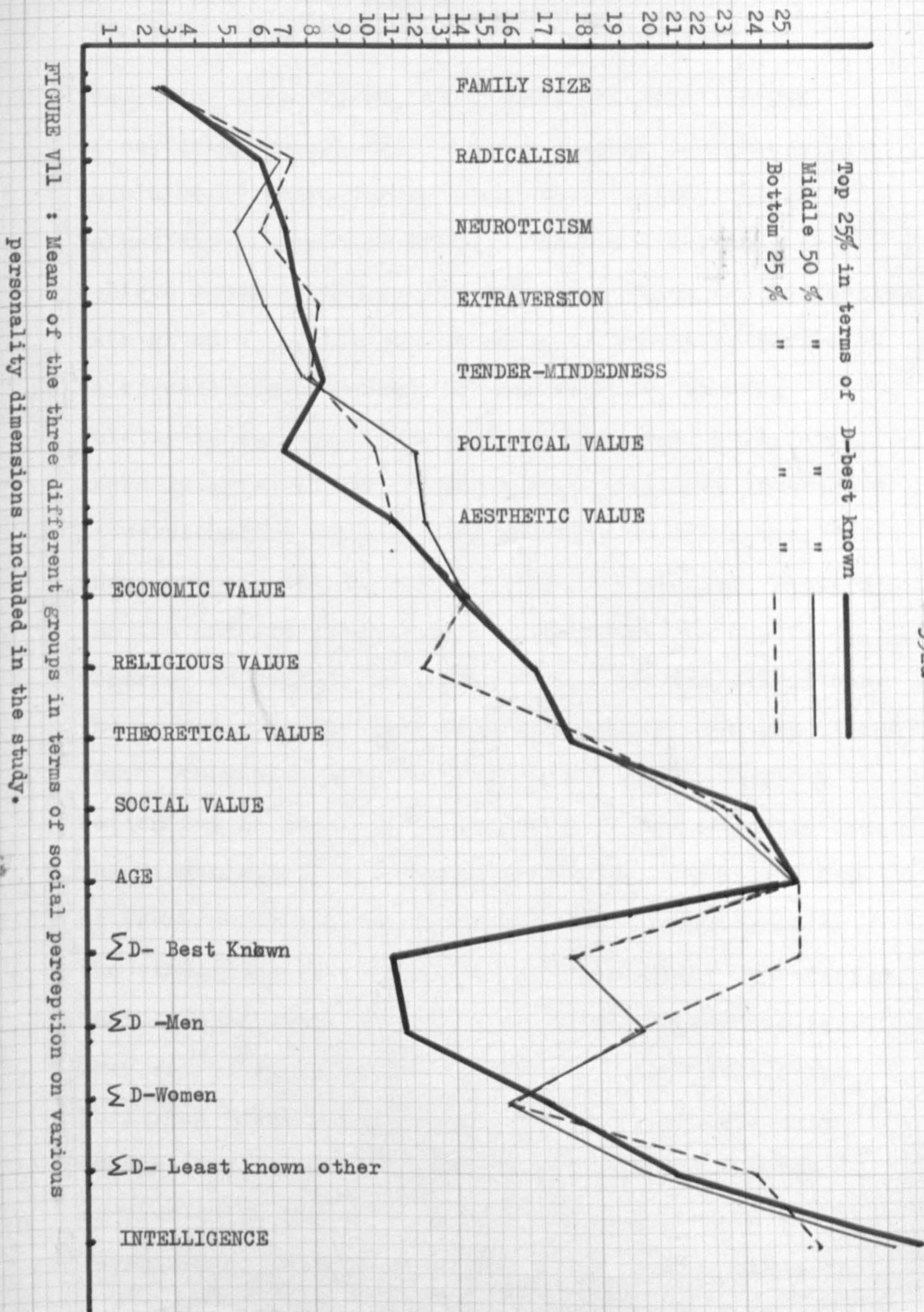


FIGURE VII : Means of the three different groups in terms of social perception on various personality dimensions included in the study.

Inspecting this figure, it appears that the top 25% of our group score higher than the other two groups on intelligence test, family size, Neuroticism, Social Values and Tender-mindedness. On the other hand they achieve lower scores on the Political Value and Radicalism. This gives a picture of the socially sensitive person as being well above average in intelligence, showing relatively more signs of neurotic troubles, being more socially oriented and tender-minded, and less interested in political aspects of life and more conservative. Yet there are certain variables which differentiate between the two extreme groups above. Thus the top 25% in accuracy of perception appear to be less extravert than the bottom 25%, but much more extraverted than the middle 50%. They also score significantly higher than the bottom 25% in terms of Religious value but slightly lower than the middle 50%. In other words, the middle 50% of the group appear to be lower than both extremes on the dimensions of family size, Extraversion, Neuroticism, Social Value, Theoretical Value, and Tender-mindedness. They score higher on the variables of Aesthetic Value, Political Value and Religious Value. Interestingly enough they have also scored lower than the top 25% in predicting the responses of women in general and the responses of their least-known other. This means that

those who occupy a middle position in terms of the accuracy of predicting the responses of a best known other also prove superior in predicting the responses of women and strangers. Hence it is possible to reverse the argument put forward so far and say that those who are top in accurately predicting the responses of women and strangers tend to be of more or less above average intelligence, come from relatively small families, prove to be more introvert but less neurotic, show higher Aesthetic, Political and Religious interests but lower social and Theoretical interests and Tender-mindedness. Their standing on Radicalism lies just between the two extremes. These observations cast some doubt as to the linearity of the relationship between our personality measures and the index of social perceptiveness. As further evidence of the lack of generality or consistency over various types of social perception it is of interest to note that the bottom 25% on accuracy of predicting the responses of the best-known other have actually shown more accuracy in predicting women's responses than the top 25% on accuracy of perceiving the well-known other!

SEX DIFFERENCES IN THE ACCURACY OF SOCIAL PERCEPTION

There has been some references to sex differences in the foregoing section of this chapter. The superior intuitive ability of women seems to be commonly accepted. Most studies of the ability to judge others have found women superior to men, although not as superior as common belief would have us to accept (Allport, 1960). Dymond (1950) and Cline (1955) have also found women slightly superior in their ability to forecast others responses.

The last column in Table 7 brings out these differences more clearly. It is observed there that men of both groups tend to demonstrate more sensitivity - i.e. smaller values of D - in predicting the responses of other men in general. Not only is men's grand mean over the ten media of prediction smaller than the women's mean, but, in both groups I and II, men have made less errors than women in nine out of the ten variables. A χ^2 test shows the difference to be significant ($\chi^2 = 6.4$). In predicting the responses of women in general, men of group I have done slightly better than women, their D-scores being smaller than those of women in six of the ten cases, but men of group II have committed more errors than women in seven of ten cases.

None of the values of X^2 reaches a significant level here.

In predicting the best known other's responses, women of group I have fared better than men in 8 out of the ten variables ($X^2 = 3.6$, P just under .05), whereas men and women have fared equally in group II. Conversely, in predicting the responses of the least-known other, women of group II have produced smaller D_{-} scores in six of the ten media of prediction while men and women of group I have done equally well. Taking the two groups together, men appear to have achieved smaller D_{-} scores in 43 out of the 80 cases. Moreover, men's grand totals of D_{-} scores over all ten media of prediction and all four types of predictees appear to be smaller than those of women in both groups. Although the mean D_{-} score of the group II as a whole ($= 14.28$) is smaller than the mean D_{-} score of either men ($=14.34$) or women (15.08) of group I, yet the mean D_{-} score of women of group II, (14.79) is still larger than the mean D_{-} score of the men of group I (14.34).

These observations indicate to men's more or less superior ability over women. Because of the dubious nature of the D_{-} score distribution an ordinary t -test of significance cannot be applied to the individual differences obtained. Instead a median test of

significance can be utilized. This test is based upon the assumption that the two groups - in this case men and women - are random samples from a population with a common median. It does not require any assumption concerning the nature of the underlying distribution. The common median of the whole sample is determined and the number of cases falling above or below this value in each of the two groups is found out. The significance of the observed differences from the value expected on the null hypothesis is tested by a X^2 test. The null hypothesis is that the two groups are from populations with the same median. If this hypothesis be true, then we would expect about half of each group's scores to be above the combined median and about half to be below it.

The tables below represent the dichotomized cases of men and women falling on either side of the combined median on the four types of social perception, Applying the following X^2 formula to these tables:

$$X^2 = \frac{N \left(\left| AD - BC \right| - \frac{N}{2} \right)^2}{(A + B)(C + D)(A + C)(B + D)}$$

it is found that none of the observed differences between men and women reach any acceptably high level of

significance; The highest value of χ^2 obtained, 2.1, is for the difference between men and women on predicting the responses of men in general, which falls short of significance at .10 level. The null hypothesis is thus not refuted. Yet ^{the} over all trend is indicative of a slight superiority for men. This is in contrast to findings of other studies.

		-	Mdn	+
ΣD for Women	Men	17	13	30
	Women	25	28	53
		42	41	83

		-	Mdn	+
ΣD for Men	Men	21	9	30
	Women	20	33	53
		41	42	83

		-	Mdn	+
ΣD for Best known other	Men	13	21	34
	Women	30	25	56
		43	47	90

		-	Mdn	+
ΣD for least known other	Men	15	19	34
	Women	30	26	56
		45	45	30

INTELLIGENCE AND SOCIAL PERCEPTION

Intelligence test scores were available for 47 members of the second group. They were based on Morrisby's Compound Series Test (Morrisby, 1955) and had recently been obtained by the College. The test is a non-verbal intelligence test designed to cover the age range of 7 to 22. It is essentially an ingenious paper and pencil version of the familiar bead stringing performance test. Morrisby suggests that it measures 'mental work power', ie. persistence and concentration in the performance of an intellectual task. But so far there has been little effort to verify his claims (See Buras, 1959, 606). For the 47 members of our sample, I.Qs on this test varied all the way from 4 to 100 with a median of 60 and a mean of 66.6. Phi correlation coefficient was calculated between the I.Qs and the total D-scores of each individual on each of the four types of prediectees. If accuracy of social perception is related to intelligence, then the ensuing correlation coefficients must be negative because, as explained above, D-scores are in fact indicative of misperception rather than perception. The higher the size of the D the less the amount of accurate prediction and vice versa. The results are presented below.

	ΣD_{Women} N=25	ΣD_{Men} N=25	$\Sigma D_{\text{b.k.o}}$ N=47	$\Sigma D_{\text{l.k.o}}$ N=47	ΣD_{bk} N=25	ΣD_{lk} N=25	$\Sigma \Sigma D$ N=25
I.Q.	.033	.196	<u>-.404</u>	-.063	<u>-.427</u>	-.238	-.032

It appears that only the relationships between the accuracy of perception of the specific others or sensitivity and I.Q. are in the expected direction. The Correlation between I.Q. and the prediction of the best know other's responses is both in the expected direction and significant beyond .01 level ($\chi^2 = 7.7$). In other words, those above median in intelligence show much less error in their predictions of the responses of their well-known acquaintances than those below median. Over 69% of the more intelligent subjects fall in the below median quadrant on ΣD_{bk} category, while 70% of those low in intelligence fall in the above median quadrant of the $\Sigma D_{\text{b.k.}}$. The failure of the correlation between I.Q. and the accuracy of predicting the least-known other's response to reach any level of significance may be taken as indicative that intelligence plays very little part in guiding the behaviour of a subject in making predictions for an unknown other.

The negative - although insignificant - correlation between intelligence and accuracy of perception in predicting the responses of others in general is not

unexpected in view of the negative correlations obtained between the two kinds of accuracy. One possible explanation for the more intelligent subject's tendency to commit more errors rather than less in predicting the responses of others in general may be that the more intelligent subjects being better aware of the relative frequencies or probabilities of each category of response in the population as a whole have intentionally tried to maximize the probability of their responses being in the correct direction by over-estimating the most frequently observed responses of the others. This is well in line with the findings of studies on probability learning in children and adults where subjects tend to maximize the probability of reward by converging their output probability curves toward a probability of 1.00, even though the input probability level is much lower (Messick and Solley, 1957). The higher size of Φ in the case of predicting the responses of men in general lends some support to this explanation. As will be remembered from the previous sections of this study, all subjects showed a much higher tendency to over-estimate the stereotype responses of men than women in general. That our more intelligent subjects have tended to demonstrate more of this trend is evidenced

by the higher value of Phi between I.Q. and the D.score in predicting the responses of men in general.

As the correlation between I.Q. and accuracy in predicting the generalized other's responses is based upon 25 cases alone, it may be of interest to find out the correlation between the I.Q. and the accuracy of predicting specific other's responses for the same number of cases. These values of Phi are given in the last three columns of the table above. It is apparent that the same tendency that was seen in the case of the whole group is also true here. In fact, in the case of this particular sample both values of Phi are larger than those obtained in connection with the whole sample. However, only the correlation between intelligence and the accuracy of predicting the best known other's response is significant at .05 level ($\chi^2 = 4.6.$) The overall conclusion then is that intelligence as measured by this particular test is significantly correlated with the accuracy of predicting the responses of one's acquaintances as defined in this study.

Social Perception and Peer-rating ;

Peer-ratings on the following five traits were available for about half of the subjects : Sociable, Warm, Intelligent, Popular, and Leader. The rating-scale used was a five-point one running from "very high" to "very low". Each subject was rated by between 9 to 5 of his classmates.

Mean ratings received by each subject on each of the five traits were correlated with the sum of his D-scores over the ten media of prediction separately for each of the four types of "others" involved. The result is summarized in the following table.

Sum of D-scores in predicting the responses of: Traits :	Men in General N = 27	Women in General N = 27	Best-Known Other N = 46	Least-Known Other N = 46
Intelligence	.038	.113	-.109	.26
Leadership	.116	.033	<u>.301</u>	-.044
Popularity	-.112	-.116	.173	-.044
Sociability	-.113	-.335	.165	-.088
Warmth	-.187	-.114	.282	-.087

Phi Correlations between Accuracy of Social Perception and Peer-rating.

On the basis of common-sense expectation and the findings of other studies, one would expect to find a positive correlation between the four measures of social perception and all of these traits. The evidence is particularly very impressive in the case of Leadership and Popularity.

Contrary to expectation, however, few of the expected correlations approach any level of significance. In fact, only the value of phi obtained between accuracy of perceiving a well-known other's responses and leadership ($\phi .301$) is significant at just above .05 level ($X^2 = 4.14$) and it is actually negative in meaning. As suggested above, D-scores are more a measure of inaccuracy than accuracy. A positive correlation between a D-score and another variable indicates that those who have been rated high on that variable have also committed more error in their predictions.

This negative and significant correlation between leadership and social sensitivity runs counter to the findings of the majority of other studies. It will be remembered from the previous chapter that of the 26 negative correlations between leadership and sensitivity found in different studies only one was significant, whereas 15 of the ⁷⁵ positive correlations were significant (Mann, 1959). Two of the remaining three correlations found in this study are also in the opposite direction. It is interesting that peer-ratings on intelligence are positively correlated with one type of accuracy only, that is, accuracy in predicting the responses of a well-known individual. This type of accuracy, it will be remembered, was also positively and significantly correlated with the intelligence as measured by Morrisby's Compound Series Test.

The results of peer-ratings, in short, lend further support to the negative findings reported above as to the generality or unity of the ability under study and its assumed personality correlates.

CHAPTER VI :

SUMMARY AND CONCLUSIONS

Social Perception is a new field of enquiry in the young science of Social Psychology. Yet it forms a happy meeting ground for all those concerned with the study and understanding of human behaviour. If we are to understand the behaviour of man it is only natural that we should first enquire into the ways and means through which we gain our knowledge about him, that is, about his inner world. The first step in this enquiry is to see how we "perceive" other human beings. The necessity of this first step may seem obvious, yet it is only round fifteen years that psychologists have seriously grasped its significance.

The development of this new field of enquiry was discussed in Chapter I. There, we indicated the lack of consensus among experts as to the exact definition or delineation of the field. Adopting Macleod's differentiation ^{between} the "Social determination of perception" and the "Perception of the social" as our starting point, we announced the second category as our main concern in this study. A detailed discussion was presented concerning the peculiar characteristics of human beings as objects of perception. This led to a consideration of the major theoretical approaches to the problem of social perception in the sense of perceiving the other person or person perception.

.....As the terms "social perception" and "empathy" are usually used interchangeably, and most of the current research on social perception was stimulated by Dymond's studies of empathy a full account of the empathic theory of understanding seemed desirable. A comprehensive review of the pertinent literature was presented and the experimental investigations of the ability in question during the past 15 years were analyzed. In this section particular attention was given to such critical studies as Gage and Cronbach's (1955) and Cronbach's (1955; 1958) conceptual and methodological analyses. Special attention was also paid to studies dealing with the generality or specificity of the ability concerned.

As the first part of our own experimental work concerns the ability of school children to predict the affective responses of their classmates, a detailed account of this special area of social perception, variously called "sociempathy", "sociometric perception", etc., was given at the end of the first chapter.

On the basis of this extensive review, in Chapter II an attempt was made to re-define the process of social perception or empathy as the process of predicting the attitudes or potential response tendencies of other persons. It was argued that such a predictive ability was part and parcel of man's cognitive system and of utmost importance for interpersonal relations. Some evidence was presented to demonstrate the equivalents of such a predictive functioning in ordinary perception and thinking. This was followed by a discussion regarding the inferential

nature of social perception as operationally defined. Two main types or categories of evidence were proposed as underlying such inferences : evidence provided by the individual other -or the category of others- whose behaviour is to be predicted, and evidence inherent in the context of prediction or the situation facing the predictee. It was pointed out that in ordinary experimental approaches to empathy part of the contextual evidence is provided by the evaluative character of the verbal situations or media of prediction used. The consequence of this for the accuracy of social perception was stated in the prediction that attitudes or responses with high social desirability value should prove easier to predict. The analysis cast some doubt as to the possibility of finding a general 'Empathic Ability' irrespective of the kind of predictee and the media of prediction involved.

Two more or less independent experiments were designed to shed further light on the conflicting results reported by other workers and to test the hypothesis derived from our own analysis. The first experiment was concerned with a study of a group of 13-14-year old school children's ability to predict the affective and evaluative responses of their classmates towards themselves. These responses were assessed by a sociometric test and a Guess Who Test. In the second study, the ability of a group of Training College students to predict the probable responses of certain categories of 'others' on a battery of tests was investigated.

The categories of others were men and women of the predictors' own age and educational background in general, one individual who was relatively well known to the predictor and one individual who was relatively unknown to him. The test battery consisted of Eysenck's (1947) Inventory of Social Attitudes, Richardson's Test of Values, and Eysenck's (1958) short Personality Questionnaire. The experimental procedure, tests and subjects used, and rationale^{for}, their adoption have been fully discussed in Chapter III.

The results of the two studies have been separately analyzed and discussed in Chapters IV and V respectively. Following is a brief resumé of the findings of the first study.

1. Children of this age group demonstrate a high degree of sensitivity to the affective responses of their classmates as measured by a sociometric test. On average, five to six guesses out of every ten guesses as to who would choose one were found to be correct. This degree of accuracy is significantly above what would happen on a pure chance basis.
2. The percentage of accuracy in guessing others' negative responses -i.e., rejections- is much lower (about 24%) and does not depart from chance expectancy.
3. There is some tendency for accuracy of perception to be higher on the more psycho-telic criteria of choice and lower on the sociotelic criteria. The reverse of this tendency obtains in predicting others' negative responses.

4. In predicting others' evaluative responses on the Guess Who Test, there is a definite tendency for the more socially desirable characterizations to produce more accuracy than the socially undesirable items. The proportion of accurate predictions made on the latter type of items usually did not depart from what would happen on pure chance level.
5. Significantly positive correlations were obtained between the accuracy scores gained in predicting one's choice status over different criteria. The same was more or less true of accuracy scores gained in predicting one's rejection status. But there was no significant correlation between the two types^{of} accuracy scores. The correlation between the accuracy in predicting one's choice status and the over-all accuracy on the Guess Who Test was also insignificant.
6. There was no difference between boys and girls in the accuracy of predicting their choice status. Boys, however, appeared to be superior in predicting others' negative responses, their percentage of accuracy being about twice that of girls. This is mainly due to the strong tendency among girls to afford their negative choices to boys and, naturally, to expect in return much more negative responses from boys than what is actually forthcoming.
7. Both boys and girls showed a strong tendency to guess as choosing or rejecting them those others whom they had chosen or rejected themselves. This tendency to be congruent could result in both accuracy and inaccuracy of perception.

8. Such correlations between accuracy of social perception and measures of personality, intelligence and social status that are obtained show^{too} little signs of significance to deserve any attention. Accuracy of social perception, however, is significantly~~/~~correlated with the sociometric status and, in fact, most of the other correlations between accuracy of perception and other variables can be regarded as artifacts of this high relationship between one's sociometric status and his ability to predict those who have chosen him.

Coming to the results of^{the} second study, it is found that:

1. In predicting the responses of men in general, both men and women of this study demonstrate a very high degree of agreement as to the relative sizes of men's mean scores on the ten dimensions involved. That is to say, they show a highly consistent tendency to over-estimate men's responses on some dimensions and to under-estimate their responses on other dimensions. The tendency is significantly in accord with the relative positions of the same variables as determined by the actual means of the sample of men included in this study. Despite this consistency, however, most of the predicted means are significantly different from the actual means of the sample of men involved. Women's predictions show more of such significant differences than men's predictions. In other

words, men seem to be better aware of the response tendencies or norms of their own sex.

2. In predicting the responses of women in general, both men's and women's predictions show much less deviation from the actual means of women, only a few of the differences between the two set of means reaching significance level. This suggests that the sample of subjects involved in this study are better aware of the response tendencies of women in general than men in general. Yet the amount of agreement between various groups of predictors as to the relative prominence of various dimensions is much less than that observed in the case of predicting men's responses. In other words, while predictors tend to show much less deviation from the actual means of women, they show relatively more difference among themselves as to the direction of this deviation. Moreover, contrary to expectation, the means of men's predictions demonstrate less deviation from the actual means of women than women's own predictions.

3. Means of the predicted responses for the "best-known" other are closer to the actual means of the group as a whole than the predicted means of either men or women in general. Few of the observed differences between the predicted and the observed means are significant.

4. The predicted means of the least-known other, however, show much larger differences with the actual means of the group.

5. Considering the accuracy of predictions over various media and for different categories of others, it is observed that the subjects show consistently higher ability in making predictions on same variables and for some kinds of others.

The values test produced the largest amount of accuracy, being closely followed by the inventory of social attitudes, and, not so closely, by the personality questionnaire. Within each of these three measures also different dimensions were associated with different amounts of accuracy. The over all indication is that variables or response areas enjoying higher degrees of prevalence or objectiveness are easier to predict than those having little objective manifestations. Thus the Neuroticism scale with its predominantly subjective items produced the smallest amount of accuracy. On the other hand, among the six dimensions of the values test, Religious Value appeared to be hardest to predict accurately. This was partly due to the observed lack of consensus among the members of the sample under study as to the significance of this dimension. The Religious Value scale of the test had by far the largest standard deviation of all the six scales.

6. Subjects appeared to be most accurate in predicting the responses of their own-sex others-in-general. They were least accurate

in predicting the responses of an unknown other. The predictions of the responses of the best-known other and the opposite -sex others-in-general occupied the second and third places respectively in terms of accuracy of prediction.

7. There appears to be little consistency or generality in accuracy of predictions over either the media or the subjects of prediction. Only about 6% of the correlation coefficients obtained among the ten media of prediction reach the .05 level of significance and some of these are negative in sign. Of the correlations between the sum of accuracy scores over the four types of predictees involved only that between the two specific others is significant at .05 level. This casts some serious doubt both on the generality of the ability under study and on the existence of two types of interpersonal sensitivity and sensitivity to the generalized other.
8. There is little evidence of any consistent relationship between accuracy of perception and the personality dimensions included in the study. Only a very small proportion of the correlations obtained is significant. But the sign and size of most correlations vary from one type of predictee to the other casting further doubt on the generality of the ability under study.
9. Men demonstrate some degree of superiority over women in terms of over all accuracy scores in both groups and on all

four types of predictions. None of the differences, however, reach the significance level. Women, on the other hand, prove to be much easier to predict than men.

10. Intelligence showed a significantly positive correlation with accuracy in predicting the best-known others' responses. But the correlations between intelligence and accuracy in predicting the generalized others' responses, although not significant, were negative.

All in all, then, our results fail to support the notion of social perception as a general ability. In this they are more in line with the findings of Crow and Hammond's (1957) study than those of Cline and Richards' (1960, 1961) studies. The failure of our findings to corroborate the correlations found by other workers between accuracy of social perception and certain aspects of personality and effectiveness in group activities further supports this conclusion.

As will be remembered from Chapter I, Cronbach's (1955; 1958) critical analyses have cast serious doubts as to the possibility of finding a general empathic ability. Later work, e.g. Cline, 1955, Cline and Richards, 1950-1961, however, seemed to contradict his predictions. Most of these studies have used one form or other of rating-scales which by their nature are biased for generality. Our study, on the other hand, is wholly based on questionnaires that cannot be suspected of any of the known response-sets of the rating-scales.

Of course, questionnaires have their own vitiating factors - response styles- some of which have already been discussed in the third Chapter of this study. These response styles, however, are different from those associated with rating scales and their implication for the accuracy or inaccuracy of social perception is not as clear-cut as that of the rating scale response sets. Moreover, recent studies have cast serious doubts as to the real significance and function of these stylistic tendencies in questionnaires. In fact, Rorer (1965), after an exhaustive review of literature has reached the conclusion that these response sets are a great myth rather than reality.

Among the response sets common to both rating-scales and questionnaires, social desirability has been singled out in our analytical scheme as a main source of accuracy in social perception. It is probable that predictions on equally desirable items or trait names will result in comparable degrees of accuracy, and hence in the finding of a "general ability". This possibility has not yet been investigated. One of the advantages of questionnaires as media of prediction is that by employing more than one item for each dimension or trait, items that are not of equal desirability, they reduce the possibility of finding such artifactual generality. Whether this same tendency may result in an equally artifactual lack of generality is hard to assume on purely conceptual grounds.

A number of unavoidable restrictions arising from shortage of time and lack of experimental facilities made it impossible for us to devise an experiment covering all the hypotheses derived from our conceptual analysis or to investigate the application of some of the results obtained with our media of prediction to other types of media. Further research is called for both to test the hypotheses derived from our analytical chapter and to find out their applicability to other media of prediction such as Dymond's and Speroff and Kerr's tests of empathy. Among these hypotheses are the situational forces or elements aiding social perception, major clues mediating the perception or inference of such forces, their acquisition and functioning. In this respect, the study by Hokanson & Doerr (1964) of the application of probability learning to interpersonal events is well worth further repetition and extension. Of particular interest is their finding that the anticipation of various types of such events is largely a matter of their frequency of occurrence in the previous encounters and experiences of the subject.

The implications of the social desirability factor for various modes of measuring social perception is also in need of further research. Here, social desirability must not be regarded as merely a vitiating influence prejudicing the process of judgement but, rather, it must be regarded as an index of the relative prevalence of an interpersonal event and its social reward or reinforcement value. It may perhaps be a good idea to combine the study of social desirability with the probability learning approach of Hokanson and Doerr and to investigate their joint contribution to the process

and outcome of social perception. Such a study can be of immense significance for theory and research in person perception and personality psychology as well.

Personality and other correlates of social perception are also in need of further research. Here it is high time that simple correlational approaches gave way to controlled experimental studies using proper designs to partial out the probable influences of other variables. So far almost all studies of the relationship between social perception, personality and effectiveness in group activities have been of an uncontrolled simple correlational nature. It is not known whether the correlations reported are due to the influence of social perception or to a higher process common to both variables concerned. Of particular interest is the relationship between social perception and intelligence. Our conceptual analysis seems to suggest a very high correlation between the two cognitive processes. The failure of reported research -including our own study - to corroborate this suggestion may be due to the fact that because of the prevalence of the interpersonal events and attitudes all those with normal intelligence tend to learn these events more or less equally. A comparison of the performances of an average group with those of an under-average or above-average group can shed further light on this problem.

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Your name :

Your age :

Boy or Girl :

Your form :

Your address :

How long have you been in this
school :

In this paper you are asked a number of questions about your classmates and yourself. We want to know how well you know your classmates and their feelings towards you. There are no right or wrong answers. What we want is your opinion on how your classmates feel towards you and how you feel towards them. Your paper will be kept entirely confidential. PLEASE TRY AND ANSWER ALL THE QUESTIONS AS BEST YOU CAN.

1. If you were asked by your English master to do your classwork in a group of six :

A. Which five girls or boys in your class would you most like to have in your group ? Give their names in order of preference.

1. 2. 3.
4. 5.

B. Which five pupils in your class would you least like to have in your group ? Give their names .

1. 2. 3.
4. 5.

C. Which five pupils in your class -boys or girls- do you think would most like to have you in their groups? Name them in order.

1. 2. 3.
4. 5.

D. Which five pupils in your class do you think would least like to have you in their groups ? Give their names.

1. 2. 3.
4. 5.

2. If you were asked by your Maths master to do your classwork in a group of six :

A. Which five of your classmates would you most like to have in your group ? Give their names in order of preference.

1. 2. 3.
4. 5.

B. Which five classmates would you least like to have in your group ? Give their names in order.

1. 2. 3.
4. 5.

C. Which five classmates do you think would most like to have you in their groups? Give their names in order.

1. 2. 3.
4. 5.

D. Which five of your classmates do you think would least like to have you in their groups ? Give their names.

1. 2. 3.

3. Which five pupils in your class would you most like to spend your free time with ? Give their names in order of preference.

1. 2. 3.
4. 5.

4. Which five pupils in your class would you least like to spend your free time with ? Give their names in order.

1. 2. 3.
4. 5.

5. Give the names of five classmates who you think would most like to spend their free time with you.

1. 2. 3.
4. 5.

6. Give the names of five classmates who you think would least like to spend their free time with you.

1. 2. 3.
4. 5.

7. Which five boys or girls in your class do you like most ? Give their names in order.

1. 2. 3.
4. 5.

8. Which five boys or girls in your class do you like least? Name them.

1. 2. 3.
4. 5.

9. Which five of your classmates do you think like you most ?Name them.

1. 2. 3.
4. 5.

10. Which five of your classmates do you think like you least? Name them.

1. 2. 3.

4. 5.

11. Give the names of five of your best friends in this class.

1. 2. 3.
4. 5.

12. If there were a national conference of student leaders in London to discuss the role of students in modern society and you were asked to choose five of your classmates to attend it, Which five boys or girls would you choose? Give their names in order. You can choose yourself too.

1.

2.

3,

4.

5.

13. Do you think you will be chosen by many people on question 12 (that is as a leader) ?

Yes	No
-----	----

14. Give the names of five of your classmates whom you regard as the most popular in this class.

1. 2. 3.

4. 5.

15. Give the names of five of your classmates whom you regard as the least popular in this class.

1. 2. 3.

4. 5.

4. 5.

5.

1. Someone whom you regard as very good at sports :
1. 2. 3.
4. 5.
2. Someone who takes life easily, who does not worry and get upset:
1. 2. 3.
4. 5.
3. Someone very good at English :
1. 2. 3.
4. 5.
4. Someone who is very fond of people, who mixes with other people easily
and has a lot of friends :
1. 2. 3.
4. 5.
5. Someone whose feelings are easily hurt and who is quickly offended.
1. 2. 3.
4. 5.
6. Someone you can rely on, who is very sincere and keeps his or her word :
1. 2. 3.
4. 5.
7. Someone who does not care much about other people and is concerned
only with his or her own interests :
1. 2. 3.
4. 5.
8. Someone very co-operative and friendly who is always willing to help others:
1. 2. 3.
4. 5.
9. Someone who is very ill-tempered and quarrelsome, who loses his or her
temper very quickly and gets irritated easily :
1. 2. 3.
4. 5.
10. Someone with a very good sense of humour, who is very fond of cracking
jokes and telling stories to his or her friends :
1. 2. 3.
4. 5.
11. Someone who worries a lot about his or her failwres, mistakes and blunders:
1. 2. 3.
4. 5.
12. Someone who is shy, who does not like bieng watched or criticised by people:
1. 2. 3.
4. 5.
13. Someone who is bossy and domineering, who likes to order other people about:
1. 2. 3.
4. 5.
14. Someone who is not interested in being with other people :
1. 2. 3.
4. 5.

A/

Here are a number of statements that describe boys and girls of your age. Read each statement carefully and see which of the boys and girls in this class fit that statement best. Write down their names under that statement. Put the name of the person whom you regard as best described by a statement after number 1, the name of the second best described person after number 2, and the name of the fifth best described boy or girl after number 5 under that statement. Do not write more than five names in each case. Do this for all of the statements. REMEMBER THAT YOUR ANSWER WILL NOT BE SEEN BY ANY OF YOUR CLASSMATES OR TEACHERS.

-
4. 5.
7. Someone who does not care much about other people and is concerned only with his or her own interests :
1. 2. 3.
4. 5.
8. Someone very co-operative and friendly who is always willing to help others:
1. 2. 3.
4. 5.
9. Someone who is very ill-tempered and quarrelsome, who loses his or her temper very quickly and gets irritated easily :
1. 2. 3.
4. 5.
10. Someone with a very good sense of humour, who is very fond of cracking jokes and telling stories to his or her friends :
1. 2. 3.
4. 5.
11. Someone who worries a lot about his or her failures, mistakes and blunders:
1. 2. 3.
4. 5.
12. Someone who is shy, who does not like being watched or criticised by people:
1. 2. 3.
4. 5.
13. Someone who is bossy and domineering, who likes to order other people about:
1. 2. 3.
4. 5.
14. Someone who is not interested in being with other people :
1. 2. 3.
4. 5.

15. Someone with a strong influence on others; someone whose opinions are generally accepted by most of his friends :

1. 2. 3.
4. 5.

16. Someone with a very low opinion of herself or himself; this person never thinks he or she does anything well :

1. 2. 3.
4. 5.

17. Someone very good at Maths :

1. 2. 3.
4. 5.

18. Someone who always takes the lead in group activities :

1. 2. 3.
4. 5.

19. Someone who frequently gets stuck, grows disheartened and so never finishes what he has started :

1. 2. 3.
4. 5.

20. Someone who feels sure he can cope, who just gets on with a job and gets it done :

1. 2. 3.
4. 5.

21. Someone whom you regard as most similar to yourself, similar in thinking, feeling and likes and dislikes :

1. 2. 3.
4. 5.

----- Now, go back over the statements again, read them carefully and see which of them describe you best. Put a circle round the number beside THOSE STATEMENTS WHICH, YOU THINK, DESCRIBE YOU BEST.

WHO ARE YOUR BEST FRIENDS IN THIS CLASS ? GIVE THEIR NAMES BELOW.

YOUR NAME :

YOUR FORM :

B/

Here are a number of statements said to describe girls and boys of your age. Last time you mentioned the names of some of your classmates on each of these statements. In the same way, some of the boys and girls in this class have mentioned your name on some of these statements, saying that those statements fit you very well. Now, I want you to guess those statements on which your name is likely to have been mentioned by one or more of your classmates. Read these statements carefully. Mark those statements on which, you think, your classmates are likely to have mentioned your name by putting a circle round their numbers. Under each of these statements write down the names of those boys and girls who, you think, may have mentioned your name on it. Remember that this is not a test; there is no right or wrong answer and what I want to know is how best you can guess the opinions of your classmates about yourself. PLEASE TRY AND GUESS AS BEST YOU CAN. Your paper will not be seen by any body but me.

1. Someone whom you regard as very good at sports :
1. 2. 3.
4. 5.
2. Someone who takes life easily, who does not worry and get upset:
1. 2. 3.
4. 5.
3. Someone very good at English :
1. 2. 3.
4. 5.
4. Someone who is very fond of people, who mixes with other people easily and has a lot of friends :
1. 2. 3.
4. 5.
5. Someone whose feelings are easily hurt and who is quickly offended.
1. 2. 3.
4. 5.
6. Someone you can rely on, who is very sincere and keeps his or her word :
1. 2. 3.
4. 5.
7. Someone who does not care much about other people and is concerned only with his or her own interests :
1. 2. 3.
4. 5.
8. Someone very co-operative and friendly who is always willing to help others:
1. 2. 3.
4. 5.
9. Someone who is very ill-tempered and quarrelsome, who loses his or her temper very quickly and gets irritated easily :
1. 2. 3.
4. 5.
10. Someone with a very good sense of humour, who is very fond of cracking jokes and telling stories to his or her friends :
1. 2. 3.
4. 5.
11. Someone who worries a lot about his or her failures, mistakes and blunders:
1. 2. 3.
4. 5.
12. Someone who is shy, who does not like being watched or criticised by people:
1. 2. 3.
4. 5.
13. Someone who is bossy and domineering, who likes to order other people about:
1. 2. 3.
4. 5.
14. Someone who is not interested in being with other people :
1. 2. 3.
4. 5.

15. Someone with a strong influence on others; someone whose opinions are generally accepted by most of his friends :

1. 2. 3.
4. 5.

16. Someone with a very low opinion of herself or himself; this person never thinks he or she does anything well :

1. 2. 3.
4. 5.

17. Someone very good at Maths :

1. 2. 3.
4. 5.

18. Someone who always takes the lead in group activities :

1. 2. 3.
4. 5.

19. Someone who frequently gets stuck, grows disheartened and so never finishes what he has started :

1. 2. 3.
4. 5.

20. Someone who feels sure he can cope, who just gets on with a job and gets it done :

1. 2. 3.
4. 5.

21. ~~Someone whom you regard as most similar to yourself, similar in thinking, feeling and likes and dislikes~~

1. 2. 3.
4. 5.

~~Now, go back over the statements again, and decide which of them describe you best. Put a circle round the number beside those statements which, you think, describe you best.~~

~~Who are your best friends in this class? Give their names below.~~

YOUR NAME :

YOUR FORM :

2

F _____
N _____

CHILDREN'S QUESTIONNAIRE

Name: Date:
Age: Sex: Date of Birth:

- | | | |
|--|-----|----|
| 1. I like friends more than books. | Yes | No |
| 2. I get angry when the class leader is too "bossy". | Yes | No |
| 3. I'm not the sort who gets ill. | Yes | No |
| 4. I can be scolded without feeling hurt. | Yes | No |
| 5. I often talk to myself. | Yes | No |
| 6. I don't mind thunderstorms. | Yes | No |
| 7. I like to be in school plays. | Yes | No |
| 8. I soon get over a quarrel. | Yes | No |
| 9. I like to go camping rather than read about it. | Yes | No |
| 10. Everything gets on my nerves. | Yes | No |
| 11. I want to work alone because I don't want other people to be praised for my ideas. | Yes | No |
| 12. It takes a lot to make me lose my temper. | Yes | No |
| 13. I would tell off a friend for being "bossy". | Yes | No |
| 14. I get so angry I can't talk. | Yes | No |
| 15. I like to tell my friends all about things that happen to me. | Yes | No |
| 16. I worry about the little mistakes I make. | Yes | No |
| 17. I'd rather not get my own way if I have to fight for it. | Yes | No |
| 18. I often giggle and laugh for no reason at all. | Yes | No |
| 19. I don't like to show people around to meet other people. | Yes | No |
| 20. If I'm crying it's always about something definite. | Yes | No |
| 21. I start the fun at a quiet party. | Yes | No |
| 22. I often feel ill when I have to go to school. | Yes | No |
| 23. I am often against what people say, and say so. | Yes | No |
| 24. I find it hard to forget my troubles. | Yes | No |
| 25. I keep quiet when I am with other people. | Yes | No |
| 26. I like swimming. | Yes | No |
| 27. I get the boys and girls together for parties, clubs, and teams. | Yes | No |
| 28. I don't often get blamed for things I did not do. | Yes | No |
| 29. I like to work alone. | Yes | No |

- | | | |
|--|-----|----|
| 30. I think most children like to make fun of me. | Yes | No |
| 31. When some child tries to push into line ahead of me, I don't like to tell him to get back. | Yes | No |
| 32. I think I'm happier now than when I was little. | Yes | No |
| 33. I do not like to have people ask me questions about myself. | Yes | No |
| 34. I very seldom lie awake at night thinking. | Yes | No |
| 35. I raise my hand so that the teacher will call on me to go on an errand. | Yes | No |
| 36. I am always afraid that sad things will happen to me. | Yes | No |
| 37. I do not like to be the leader in games. | Yes | No |
| 38. I say one thing and do another. | Yes | No |
| 39. I like to spend my holiday at some quiet place. | Yes | No |
| 40. I often think people follow me at night. | Yes | No |
| 41. I feel at home at parties. | Yes | No |
| 42. I think my parents pick on me too much. | Yes | No |
| 43. I would rather go to a party than stay at home. | Yes | No |
| 44. I wish to do the right thing, but sometimes I can't get myself to do it. | Yes | No |
| 45. I do almost everything other people tell me to do. | Yes | No |
| 46. I always want to have my way with other people. | Yes | No |
| 47. I hate to have people look at me when I am working. | Yes | No |
| 48. I believe almost anything that anybody tells me. | Yes | No |
| 49. I don't like to tell the grocer that it is my turn when he tries to wait on someone else first. | Yes | No |
| 50. I often feel sad for no reason at all. | Yes | No |
| 51. Give the names of those classmates who, you think, are most likely to have answered this questionnaire in the same way as you have done. | | |

INVENTORY OF SOCIAL ATTITUDES

YOUR NAME :

SEX :

CLASS:

Below are given forty statements which represent widely held opinions on various social questions, selected from speeches, books, newspapers, etc. They were chosen in such a way that most people are likely to agree with some and to disagree with others. After each statement, you are requested to record your personal opinion regarding it. If you strongly approve, put two crosses after it -like this: + +. If you approve on the whole, put one cross after the statement. If you can't decide for or against, or if you think the question is worded in such a way that you can't give an answer, put a zero -like this: 0. If you disapprove on the whole, put a minus sign. And if you strongly disapprove, put two minus signs, like this: - -. BE SURE NOT TO OMIT ANY QUESTIONS.

Attitude statements

Your opinion

- | | |
|--|-----------|
| 1. Coloured people are innately inferior to white people. |1 |
| 2. Present laws favour the rich as against the poor. |2 |
| 3. War is inherent in human nature. |3 |
| 4. The marriage bar on female teachers should be removed. |4 |
| 5. Persons with serious hereditary defects and diseases should be compulsorily sterilized. |5 |
| 6. Our treatment of criminals is too harsh; we should try to cure, not to punish them. |6 |
| 7. Our present difficulties are due rather to moral than to economic causes. |7 |
| 8. In the interests of peace, we must give up part of our national sovereignty. |8 |
| 9. Sunday-observance is old fashioned and should cease to govern our behaviour. |9 |
| 10. It is wrong that men should be permitted greater sexual freedom than women by society. |10 |
| 11. Unrestricted freedom of discussion on every topic is desirable in the Press, in literature, on the stage, etc. |11 |
| 12. Ultimately, private property should be abolished, and complete socialism introduced. |12 |
| 13. Conscientious objectors are traitors to their country, and should be treated accordingly. |13 |
| 14. A certain amount of sex education should be given at school to all boys and girls. |14 |
| 15. The laws against abortion should be abolished. |15 |
| 16. Only by going back to religion can civilization hope to survive. |16 |
| 17. Marriage between white and coloured people should be strongly discouraged. |17 |

<u>Attitude statement</u>	<u>Your opinion</u>
18. Jews are as valuable, honest, and public-spirited citizens as any other group.	. . . .18
19. Major questions of national policy should be decided by reference to majority opinion (e.g. by referendum)	. . . .19
20. There should be far more controversial and political discussion over the radio.	. . . .20
21. The present licensing laws should be altered so as to remove restrictions on hours of opening.	. . . .21
22. All human beings are born with the same potentialities.	. . . .22
23. Divorce laws should be altered to make divorce easier.	. . . .23
24. Patriotism in the modern world is a force which works against peace.	. . . .24
25. Modern life is too much concentrated in cities; the Government should take steps to encourage a "return to the country".	. . . .25
26. Crimes of violence should be punished by flogging.	. . . .26
27. The nationalization of great industries is likely to lead to inefficiency, bureaucracy, and stagnation.	. . . .27
28. It is right and proper that religious education in schools should be made compulsory.	. . . .28
29. Men and women have the right to find out whether they are sexually suited before marriage (e.g. by companionate marriage).	. . . .29
30. The principle "Spare the rod and spoil the child" has much truth in it, and should govern our methods of bringing up children.	. . . .30
31. Women are not the equals of men in intelligence, organizing ability, etc.	. . . .31
32. Experiments on living animals should be forbidden.	. . . .32
33. The Jews have too much power and influence in this country.	. . . .33
34. Differences in pay between men and women doing the same work should be abolished.	. . . .34
35. Birth control, except when medically indicated, should be made illegal.	. . . .35
36. The death penalty is barbaric, and should be abolished.	. . . .36
37. There will be another war in twenty-five years.	. . . .37
38. Scientists should take no part in politics.	. . . .38
39. The Japanese are by nature a cruel people.	. . . .39
40. Only people with a definite minimum of intelligence and education should be allowed to vote.	. . . .40

Your Name:

Age :

Sex :

Father's occupation :

To which political party or group do you belong ?

Do you take part in the student activities of your college? YES NO

In what capacity or capacities?

To which religious denomination do you belong?

Are you satisfied with the prospects of your future profession?

Have you answered all the items in this questionnaire?

PART II

To which of the following "good causes" would you more willingly contribute -

- [illegible]

6. If you were arranging a school curriculum, which of the following subjects would you regard as more important -
 - (a) current affaires
 - (b) religious education
 - (c) music
 - (d) practical subjects such as woodwork and domestic science?
7. Would you rather work with people who are
 - (a) efficient
 - (b) artistic and imaginative
 - (c) important and distinguished
 - (d) have intelligent interests ?
8. If you were an architect, would you rather design
 - (a) a church
 - (b) a town hall
 - (c) a public library
 - (d) a hospital ?
9. Which of the following conditions would be more likely to make you leave your job -
 - (a) ugly surroundings
 - (b) unsatisfactory human relationships
 - (c) little chance of promotion
 - (d) work which is too easy to keep your mind fully occupied?
10. Would you be more likely to read the Bible -
 - (a) for its religious significance
 - (b) as imaginative literature
 - (c) for its philosophical or historical interest
 - (d) for its human interest ?
11. Which of the following you think could do most towards achieving international peace -
 - (a) clear thinking on all sides
 - (b) a spread of religious faith
 - (c) a steady rise in the standard of living everywhere
 - (d) some form of international organisation with a strong "police force" at its disposal ?
12. One should guide one's conduct according to -
 - (a) the practical needs of the moment
 - (b) reasoned principles of behaviour
 - (c) consideration for others
 - (d) one's religious faith ?
13. Would you rather be considered
 - (a) likeable
 - (b) intelligent
 - (c) capable
 - (d) successful ?

[illegible]

14. If you were in great trouble and could do nothing to improve the situation, would you find more comfort in -
- (a) prayer
 - (b) being with other people
 - (c) getting on with some useful work
 - (d) listening to music or reading imaginative literature ?

a	b	c	d

15. In order to be happy, man needs
- (a) a reasonable standard of material well-being
 - (b) the feeling of being accepted by a social group
 - (c) an awareness of something beyond the material world
 - (d) success in some important activity ?

Your name : *Carstence Taylor* Sex *Female*

Class or Group : *M.*

a	b	c	d

66

PERSONAL QUESTIONNAIRE

Please answer the following questions as accurately as you can. Do not omit any question. If you feel uncertain on any question put a question mark after your answer. To answer a question, underline YES or NO after it.

1. Do you sometimes feel happy, sometimes depressed, without any apparent reason ? YES No
2. Would you be very unhappy if you were prevented from making numerous social contacts ? YES NO
3. Do you have frequent ups and downs in mood either with or without apparent cause ? YES NO
4. Would you rate yourself as a lively individual ? YES NO
5. Are you inclined to be moody ? YES NO
6. Are you inclined to be quick and sure in your actions? YES No
7. Does your mind often wander while you are trying to concentrate ? YES NO
8. Do you usually take the initiative in making new friends? YES NO
9. Are you frequently "lost in thought" even when supposed to be taking part in a conversation ? Yes NO
10. Are you happiest when you get involved in some project that calls for rapid action ? YES NO
11. Are you sometimes bubbling over with energy and sometimes very sluggish ? YES NO
12. Do you prefer action to planning for action ? YES NO

N. E.

TRAITS:		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
		S O C I A B L E	T O U C H Y	I N T E L L I G E N C E	I M M A T U R E	T A L K A T I V E	W A R M	A G G R E S S I V E	H E L P F U L	S H Y	L I V E L Y	I N F L U E N T I A L	I M P U L S I V E	E A S Y G O I N G	W O R R I E D	L E A D E R S H I P	P O P U L A R I T Y	I M A G I N A T I V E	D E S I R A B L E	E X T R A V E R T	E M O T I O N A L I T Y
PERSONS :	1.																				
	2.																				
	3.																				
	4.																				
	5.																				
	6.																				
	7.																				
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	28																				
	29																				
	30																				

Which of the above traits would you consider as very important in making your choices for the above mentioned student conference? Give them in order here:

What other characteristics would you consider as important in making your choices for the same purpose? Give them here.

YOUR NAME:

Following are a number of traits said to represent the basic aspects of human personality. You are requested to rate your self and your classmates (whose names are printed on the attached paper) in terms of each of these traits, by giving them a mark from 1 to 5 ; where

"1" means "Very High" on the given trait,

"2" means "High, Above Average but not Very High" on the given trait,

"3" means "About Average, Neither High Nor Low" on the given trait,

"4" means "Low, Under Average, but not Very Low" on the given trait,

and "5" means "Very Low" on the given trait.

The only thing you have to do is to put one of these numbers in the space after each name (or its corresponding number) under the trait name. In the general population, these traits are supposed to be normally distributed, that is , in a manner that only 10% of people can be rated as "Very High", 20% as "High", 40% as "Average", 20% as "Low" and only 10% as "Very Low". Please try and keep to these percentages in distributing your ratings. Do not start rating on a trait before you have finished rating on all traits before it. The traits, in order they appear on the following table, are:

- ①. SOCIABLE , vs. UNSOCIABLE.
2. TOUCHY, easily offended, too sensitive, vs. EVEN-TEMPERED.
- ③. INTELLIGENT, vs. DULL.
4. IMMATURE, vs. MATURE.
5. TALKATIVE, vs. RESERVED
- ⑥. WARM, vs. COLD.
7. AGGRESSIVE, vs. PEACEFUL.
8. HELPFUL, vs. NOT HELPFUL.
9. SHY, vs. BOLD.
10. LIVELY, vs. QUIET.
11. INFLUENTIAL, vs. LACKING SOCIAL INFLUENCE.
12. IMPULSIVE, vs. CAREFUL.
13. EASYGOING, vs. SOBER.
14. WORRIED, vs. CAREFREE.
- ⑮. LEADERSHIP ABILITY, vs LACK OF LEADERSHIP ABILITY.
- ⑯. POPULARITY WITH OTHERS, i.e., whether he is liked by the group.
17. IMAGINATIVE, vs. UNIMAGINATIVE.
18. DESIRABILITY AS A COMPANION, i.e., to spend your freetime with.
19. EXTRAVERTED, vs. INTROVERTED.
20. EMOTIONALLY BALANCED, vs. NOT EMOTIONALLY BALANCED.

If there were an important conference of student leaders and you were asked to elect five of your classmates (i.e., those listed in the attached paper) to represent you in the conference, which five would you choose ? Give their names in order of preference: 1. 2.

3.

4.

5.

Give the names of five of your closest friends in this group.

GENERAL INSTRUCTIONS:

The aim of this study is to find out how well you can predict the responses of certain others to certain questions. There are three short questionnaires. Read the instructions for each questionnaire carefully and give your own answer for each question in the space provided after each question. When you have finished this, go over the questionnaires again and on each question think of the most probable answer that the _____ in your class are likely to have given. Register this answer in the appropriate section of this sheet, after the number of each question. Do the same thing from the point of view of the _____ your class and register their responses in the appropriate section of this sheet. Please do not leave out any question even if you are not sure about your predictions. What we are interested in is your predictions regardless of whether they are accurate or not. Try and guess as best you can. Your paper will be kept entirely confidential.

INVENTORY OF SOCIAL ATTITUDES

QUESTION NO.			QUESTION NO.		
1.			21.		
2.			22.		
3.			23.		
4.			24.		
5.			25.		
6.			26.		
7.			27.		
8.			28.		
9.			29.		
10.			30.		
11.			31.		
12.			32.		
13.			33.		
14.			34.		
15.			35.		
16.			36.		
17.			37.		
18.			38.		
19.			39.		
20.			40.		

RICHARDSON TEST OF INTERESTS

QUESTION	BOYS' ANSWER				GIRLS' ANSWER				QUESTION	BOYS' ANSWER				GIRLS' ANSWER			
	a	b	c	d	a	b	c	d		a	b	c	d	a	b	c	d
1.									9.								
2.									10.								
3.									11.								
4.									12.								
5.									13.								
6.									14.								
7.									15.								
8.																	

PERSONAL QUESTIONNAIRE

QUESTION NO.	BOYS' ANSWER		GIRLS' ANSWER		QUESTION NO.	BOYS' ANSWER		GIRLS' ANSWER	
	YES	NO	YES	NO		YES	NO	YES	NO
1.					1.				
2.					2.				
3.					3.				
4.					4.				
5.					5.				
6.					6.				
					7.				
					8.				
					9.				
					10.				
					11.				
					12.				

YOUR NAME:

YOUR CLASS:

APPENDIX

COPIES OF THE TEST MATERIAL USED

1. Sociometric Questionnaire.
2. Guess Who Test.
3. Junior Maudsley Personality Inventory.
4. Inventory of Social Attitudes.
5. Richardson's Test of Values, Part II.
6. Eysenck's Short Personality Inventory.